# TRANSPORTATION POLICY PLAN

## Chapter 12:
## Federal Requirements

2040

# TRANSPORTATION POLICY PLAN

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## Chapter 12: Federal Requirements

# Federal Requirements

Chapter 12 of the *2040 Transportation Policy Plan* responds to federal planning requirements contained in the Moving Ahead for Progress in the 21st Century (MAP-21) legislation and other requirements for transportation planning in federal statute, regulation, or guidance and provides references to other sections in this policy plan or to other Council documents that address the requirements. Portions of this section respond to guidance from other sources, including, but not limited to, the equity discussion as directed by the Metropolitan Council, and the air quality discussion as directed by the Minnesota Pollution Control Agency (MPCA).

# Transportation System Performance Evaluation

## Background

MAP-21 instituted a requirement that the metropolitan planning process establish and use a performance-based approach to transportation decision making to support national goals. Federal law established performance goals in seven areas:

- Safety – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- Infrastructure Condition – To maintain the highway infrastructure asset system in a state of good repair
- Congestion Reduction – To achieve a significant reduction in congestion on the National Highway System
- System Reliability – To improve the efficiency of the surface transportation system
- Freight Movement and Economic Vitality – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- Environmental Sustainability – To enhance the performance of the transportation system while protecting and enhancing the natural environment
- Reduced Project Delivery Delays – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

There are no performance goal areas established for the other transportation systems in federal law.

## Surface Transportation Performance Measures and Targets

The secretary of transportation, in consultation with state departments of transportation, metropolitan planning organizations, and other stakeholders, shall define performance measures and standards to be used to assess the impact of system investments on the goal areas. At this time, the anticipated date of release of the definitions of United States Department of Transportation (USDOT) performance measures is in the first half of 2015.

MnDOT will have one year to set performance targets that reflect the USDOT-defined measures to use in tracking progress towards attainment of critical outcomes. The state may set different performance targets for urbanized and rural areas. Under the guidance of MAP-21, the selection of performance targets by MnDOT is coordinated with the relevant metropolitan planning organizations to ensure consistency, to the maximum extent practicable.

Subsequent to MnDOT setting targets, the Metropolitan Council, as the metropolitan planning organization, is required to establish targets for the USDOT-defined performance measures

not later than 180 days after the date MnDOT establishes performance targets. The USDOT defined performance measures and the targets for these measures shall be amended into the Transportation Policy Plan as soon as reasonable.

## Transit Performance Measures and Targets

The secretary of transportation is also required to establish performance measures based on state-of-good-repair standards for measuring the condition of transit capital assets including equipment, rolling stock, infrastructure, and facilities. These measures will apply to all recipients of federal transit funding. In October 2013, Federal Transit Administration (FTA) released an Advance Notice of Proposed Rulemaking on the performance measures. This advance notice requested input on FTA's potential approaches to define and measure "state of good repair." These approaches are, as follows:

- Asset age
- Asset condition
- Asset performance or
- A comprehensive (combined) approach

Three months after the release of the final performance measures (anticipated in the first half of 2015) each recipient shall establish performance targets for the measures. Annually, the recipients shall submit a report that describes progress toward meeting the performance targets and the targets set for the next fiscal year.

After public transit providers set targets, the Council, as the metropolitan planning organization, is required to establish targets for the USDOT-defined performance measures no later than 180 days after the date public transit providers set targets. The selection of regional performance targets is to be coordinated with public transit providers to ensure consistency.

## Placeholder Performance Measures

The American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Performance Management has recommended performance measures to the USDOT for their consideration in defining the performance measures related to surface transportation. Until the USDOT releases their performance measures, these AASHTO-recommended performance measures are used as placeholders to begin restructuring the Transportation Policy Plan to a performance-based planning process.

These performance measures address six of the national goal areas. No performance measure has been suggested by the AASHTO committee for transit state-of-good-repair, but a reference is included to identify that a measure for this area will need to be included when defined. The AASHTO recommended performance measures are as follows:

## Safety

- Number of Fatalities – Five-year moving average of the count of the number of fatalities on all public roads for a calendar year. Data comes from the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS)
- Fatality Rate – Five-year moving average of the number of fatalities divided by the five-year moving average of vehicle miles traveled (VMT)
- Number of Serious Injuries – Five-year moving average of the count of the number of serious injuries on all public roads for a calendar year. Data comes from NHTSA's FARS
- Serious Injury Rate – Five-year moving average of the number of serious injuries divided by the five-year moving average of VMT

## Pavement Condition

- Interstate Pavement in Good, Fair, and Poor Condition based on the International Roughness Index (IRI) – Percentage of 0.1-mile segments of interstate pavement mileage in good, fair, and poor condition based on the following criteria: good if IRI<95, fair if IRI is between 95 and 170, and poor if IRI is greater than 170
- Non-Interstate National Highway System Pavement in Good, Fair and Poor Condition based on the International Roughness Index (IRI) – Percentage of 0.1-mile segments of non-interstate National Highway System pavement mileage in good, fair and poor condition based on the following criteria: good if IRI<95, fair if IRI is between 95 and 170, and poor if IRI is greater than 170
- Pavement Structural Heath Index – Percentage of pavement which meet minimum criteria for pavement faulting, rutting and cracking

## Bridges

- Percent of Deck Area on Structurally Deficient Bridges – National Highway System bridge deck area on structurally deficient bridges as a percentage of total National Highway System bridge deck area
- National Highway System Bridges in Good, Fair, and Poor Condition based on Deck Area – Percentage of National Highway System bridges in good, fair and poor condition, weighted by deck area

## Freight

- Annual Hours of Truck Delay (AHTD) – Travel time above the congestion threshold in units of vehicle-hours for trucks on the Interstate Highway System
- Truck Reliability Index (RI80) – The RI is defined as the ratio of the total truck travel time needed to ensure on-time arrival to the agency-determined threshold travel time (e.g., observed travel time or preferred travel time)

## System Performance

- Annual Hours of Delay (AHD) – Travel time above a congestion threshold (defined by State DOTs and MPOs) in units of vehicle-hours of delay on Interstate and National Highway System corridors
- Reliability Index (RI80) – The Reliability Index is defined as the ratio of the 80th percentile travel time to the agency-determined threshold travel time

## Congestion Mitigation and Air Quality (CMAQ)

- Criteria Pollutant Emissions – Daily kilograms of on-road, mobile source criteria air pollutants (VOC, NOx, PM, CO) reduced by the latest annual program of CMAQ projects
- Annual Hours of Delay (AHD) – Travel time above a congestion threshold (defined by State DOTs and metropolitan planning organizations) in units of vehicle-hours of delay reduced by the latest annual CMAQ program of projects

## Transit Capital Assets State of Good Repair

- To be added when FTA releases a Notice of Proposed Rule Making

# Existing Transportation System Performance and Performance of Highway and Transit Investment Plans

The following material reports on the previously described MAP-21 performance measures used as placeholders and the performance of the investment plans for the highway system and the transit system in 2040. The performance is evaluated (using 2040 traffic forecasts for both scenarios) as a comparison between the:

- Existing system plus the programmed improvements (the current *2014-2017 Transportation Improvement Program*) and
- Improvements included in the Current Revenue Scenario for the highway and transit investment plans.

In addition to the measures identified and required by the USDOT under the provisions of MAP-21 (which are included in this section), measures more relevant to the issues facing the Twin Cities region are also included. Many of the measures can apply to several of the goals of this plan and they are grouped under the goal areas for which they are most applicable.

## Transportation System Stewardship Performance Measures

### Pavement Condition

The International Roughness Index (IRI) is a measure of smoothness and ride quality. This standard simulates a standard vehicle traveling down the roadway and is equal to the total anticipated vertical movement of this vehicle accumulated over the length of the section. IRI is typically reported in units of inches per mile (vertical inches of movement per mile traveled). If a pavement is perfectly flat, the IRI would be zero (no vertical movement of the vehicle). The thresholds for the three breakpoints are as follows:

- Good: IRI Less than 95
- Fair: IRI greater than or equal to 95 and less than or equal to 170
- Poor: IRI greater than 170

MnDOT provided 2012 data for the trunk highway system based on their ride quality index (RQI). The RQI is based on the IRI. In Minnesota, the IRI is converted to RQI so that the roadway user's opinions regarding what roughness is unacceptable can be taken into account.

**Table 12-1:** 2012 Urbanized Area Roadway Miles of Trunk Highway System by RQI Pavement Condition

| System | Good | Fair | Poor | Total |
|---|---|---|---|---|
| NHS Interstate | 317.7 | 137.5 | 11.2 | 466.4 |
| NHS – Non-Interstate | 538.3 | 185.6 | 33.1 | 757.0 |
| Non-NHS | 248.0 | 163.1 | 41.2 | 452.3 |
| Total | 1,104.0 | 486.2 | 85.5 | 1,675.7 |

**Table 12-2:** 2012 Urbanized Area Percent of Roadway Miles of Trunk Highway System by RQI Pavement Condition

| System | Good | Fair | Poor | Total |
|---|---|---|---|---|
| NHS Interstate | 68.1% | 29.5% | 2.4% | 100% |
| NHS – Non-Interstate | 71.1% | 24.5% | 4.4% | 100% |
| Non-NHS | 54.8% | 36.1% | 9.1% | 100% |
| Total | 65.9% | 29.0% | 5.1% | 100% |

**Recent trend analysis:** This measure is difficult to interpret with only one data point, however, some observations can be made. First, focusing on the National Highway System, the Interstate system has the lowest number of roadway miles in poor condition. But the non-interstate National Highway System has a higher number of miles and percent of miles in good condition. The non-National Highway System state trunk highway system does suffer from poorer overall pavement condition. The amount of that portion of the state trunk highway system in poor condition is almost four times that of the interstate system. It also has fewer miles in good condition.

## Bridge Condition

**Table 12-3:** Percent of Deck Area on Structurally Deficient National Highway System and Non-National Highway System Bridges in Urbanized Area

| Year | NHS Bridges | Non-NHS Bridges |
|---|---|---|
| 2008 | 3.2% | 8.2% |
| 2009 | 3.1% | 8.2% |
| 2010 | 3.1% | 8.2% |
| 2011 | 3.1% | 9.9% |
| 2012 | 3.0% | 10.0% |

**Recent trend analysis:** The condition of bridges on the National Highway System improved slightly between 2008 and 2012. The percent of deck area of structurally deficient National Highway System bridges declined over the period. However, the percent of deck area of structurally deficient non-system bridges rose over the same period.

## Extent and Duration of Congestion by Lane-Miles

**Table 12-4:** AM Plus PM Miles of Directional Congestion

| Year | Severe Congestion (Congested Two or More Hours) | Moderate Congestion (Congested One to Two Hours) | Low Congestion (Congested for Less than One Hour) | Total |
|---|---|---|---|---|
| 2012 | 85 | 128 | 113 | 325 |
| 2011 | 73 | 125 | 121 | 319 |
| 2010 | 82 | 127 | 117 | 326 |
| 2009 | 55 | 107 | 114 | 276 |
| 2008 | 51 | 104 | 108 | 263 |
| 2007 | 82 | 112 | 111 | 305 |
| 2006 | 64 | 97 | 107 | 267 |

Source: Metropolitan Freeway System 2012 Congestion Report – Total may not equal sum of Severe, Moderate, and Low Congestion due to rounding.

**Table 12-5:** AM Plus PM Percent of Miles of Directional Congestion

| Year | Severe Congestion (Congested Two or More Hours) | Moderate Congestion (Congested One to Two Hours) | Low Congestion (Congested for Less than One Hour) | Total |
|---|---|---|---|---|
| 2012 | 5.6% | 8.4% | 7.5% | 21.4% |
| 2011 | 4.8% | 8.1% | 7.9% | 21.0% |
| 2010 | 5.4% | 7.3% | 7.7% | 21.5% |
| 2009 | 3.6% | 7.5% | 7.5% | 18.2% |
| 2008 | 3.4% | 8.6% | 7.1% | 17.3% |
| 2007 | 6.3% | 6.8% | 8.6% | 20.9% |
| 2006 | 4.9% | 7.1% | 8.2% | 18.3% |

Source: Metropolitan Freeway System 2012 Congestion Report – Total may not equal sum of Severe, Moderate, and Low Congestion due to rounding.

**Recent trend analysis:** The amount of congestion in the region has remained fairly constant over time. Roads experiencing moderate to low levels of congestion have shown more of a rise over the reporting period than have the roads with severe congestion.

**Investment plan analysis:** The Current Revenue Scenario results in an overall decrease in the number of lane-miles of the National Highway System experiencing congestion in both the AM (-2.8%) and PM (-1.7%) peak hour.The directional lane-miles experiencing congestion in the combined AM and PM peak hours show a decline in all duration categories (1 hour, 2 hours, and 3 or more hours).

## Average Annual Aircraft Delay at Minneapolis-Saint Paul International Airport

**Table 12-6:** Average Annual Aircraft Delay at Minneapolis-Saint Paul International Airport

| Year | Average Delay in Minutes |
|---|---|
| 2013 | NA |
| 2012 | 4.0 |
| 2011 | 4.6 |
| 2010 | 5.1 |
| 2009 | 5.6 |

When calculating the average delay per aircraft operation, airport-attributable delay is estimated by comparing a flight's actual air and taxi times with estimated unconstrained times. The total cumulative amount of delay experienced by all scheduled flights in the database is then divided by the total number of flights in the database for the same time period. The output is usually expressed in minutes of delay per operation.

**Recent trend analysis:** The average delay between 2009 and 2012 has declined by over one and a half minutes.

## Safety and Security Performance Measures

### Number of Fatalities and Serious Injuries

**Table 12-7:** Number of Fatalities and Serious Injuries

| 5-Year Period | Urbanized Area 5-Year Rolling Average Traffic Fatalities | Urbanized Area 5-Year Rolling Average Traffic Serious Injuries |
|---|---|---|
| 2012 through 2008 | 114.6 | 491.4 |
| 2011 through 2007 | 126.2 | 535.4 |
| 2010 through 2006 | 133.8 | 600.8 |
| 2009 through 2005 | 145.8 | 680.6 |
| 2008 through 2004 | 155.2 | 788 |

Source: MnDOT

### Fatality and Serious Injuries Rates

**Table 12-8:** Fatality and Serious Injuries Rates

| 5-Year Period* | Urbanized Area 5-Year Rolling Average Traffic Fatalities over 5 Year Period per 1B VMT | Urbanized Area 5-Year Rolling Average Traffic Serious Injuries over 5 Year Period per 1B VMT |
|---|---|---|
| 2012 through 2008 | 4.2 | 17.9 |
| 2011 through 2007 | 4.6 | 19.5 |
| 2010 through 2006 | 4.9 | 21.9 |
| 2009 through 2005 | 5.3 | 24.8 |
| 2008 through 2004 | 5.7 | 28.9 |

Source: MnDOT

**Recent trend analysis:** The number and rate of both fatalities and serious injuries have fallen continuously throughout the reporting period. This measure should continue to be monitored to ensure further reductions.

**Investment plan analysis:** The Current Revenue Scenario results in an overall decrease of just over 400 crashes (-0.6%) in the annual total number of crashes. The change in projected number of crashes was developed using crash rates per vehicle-mile-traveled (VMT) categorized by road type and urban/rural area type. The crash rates were applied to the VMT from the 2040 TIP scenario and the VMT from the 2040 Current Revenue Scenario to quantify the projected number of crashes under each scenario.

## Transit Incidents

Metro Transit reported the following data for its system:

**Table 12-9:** 2012 and 2013 Transit Incidents

| Accident Classification | 2012 | 2013 |
|---|---|---|
| Total Traffic Collisions | 1,188 | 1,041 |
| Traffic Accidents per 100,000 miles | 3.96 | 3.37 |
| Total Customer Accidents | 297 | 324 |
| Customer Accidents per 100,000 miles | 0.99 | 1.05 |

Four major incidents were reported to the National Transit Database for 2013 in which 11 persons were injured. This data also covers transit providers other than Metro Transit or Metro Mobility.

**Recent trend analysis:** Incidents involving buses have shown a decline over the two-year period (-8%).

## Crashes Involving Bicycles per Capita

**Table 12-10:** Number and Rate of Crashes Involving a Bicycle

| Year | 7-County Crashes Involving Bicycles* | Wright and Sherburne County Urbanized Area Crashes Involving Bicycles* | Total Crashes Involving Bicycles* | Rate of Crashes Involving Bicycles per Capita (1000) |
|---|---|---|---|---|
| 2013 | 660 | 2 | 662 | NA |
| 2012 | 739 | 2 | 741 | 0.25 |
| 2011 | 707 | 1 | 708 | 0.24 |
| 2010 | 643 | 4 | 647 | 0.22 |
| 2009 | 713 | 6 | 719 | 0.24 |
| 2008 | 702 | 6 | 708 | 0.24 |
| 2007 | 780 | 3 | 783 | 0.27 |
| 2006 | 690 | 4 | 694 | 0.24 |

Source: Minnesota Crash Mapping Analysis Tool (MnCMAT)
*Crashes are reported if they occur on a public road, involve a fatality or serious injury, or result in $1,000 or more of property damage. These requirements may result in the under-reporting of bicycle incidents.

**Recent trend analysis:** The number of crashes involving bicycles and the rate per capita is erratic due to the small sample size. Generally, the trend in the number of crashes is more evident as declining if a five-year rolling average is used as with traffic fatalities and serious injuries. Then the number of crashes involving bicycles falls from an average high of 708 in the first 5-year period to a low of 693 in the most recent 5-year period.

## Access to Destinations Performance Measures

### Annual Hours of Delay and Delay per Capita

The TTI Urban Mobility Report calculates total annual person-hours of delay. However, these are system-wide and not focused solely on the National Highway System.

**Table 12-11:** Annual Delay

| Year | Annual Person-Hours of Delay | Annual Person-Hours of Delay per Capita |
|---|---|---|
| 2011 | 60,788,000 | 23.33 |
| 2010 | 60,193,000 | 24.18 |
| 2009 | 56,808,000 | 21.06 |
| 2008 | 64,572,000 | 22.05 |
| 2007 | 61,122,000 | 22.05 |
| 2006 | 62,438,000 | 24.29 |

Source: 2012 Urban Mobility Report; Texas Transportation Institute

**Recent trend analysis:** The per capita rate of annual hours of delay was erratic between 2006 and 2011. Between 2006 and 2009, the number of person-hours of delay and the delay per capita generally declined. However, between 2009 and 2011, both measures have increased. These measures should continue to be monitored.

**Recent trend analysis:** Annual person-hours of delay displayed some erratic behavior over the reporting period. However, it has shown a decline over most of the period, but started to increase again between 2010 and 2011. This measure should continue to be monitored.

## Reliability Index

The TTI Urban Mobility Report calculates the Freeway Planning Time Index (PTI) at both the 95th and 80th percentile points. Computed with the 95th percentile (PTI95%) travel time it represents the amount of time that should be planned for a trip to be late for only one day a month. Computed with the 80th percentile (PTI80%) travel time it represents the amount of time that should be planned for a trip to be late for only one day a week. A PTI of 3.00 means that for a 20-minute trip in light traffic, 60 minutes should be planned. For 2011, these values were as follows:

- PTI95% – 3.14 (20-minute trip would take 62.8 minutes)
- PTI80% – 1.79 (20-minute trip would take 35.8 minutes)

**Recent trend analysis:** With only one year of data to work from, it is impossible to reach any conclusions regarding this measure. However, this data should be monitored and the system as a whole studied to determine if the apparent high level of the Planning Time Index is due to any controllable conditions. It should be mentioned that the region is just barely above the average for large regions in the TTI Urban Mobility Report. The average 95th percentile Freeway PTI for large regions was 3.12 (versus 3.14 in the Twin Cities) and the 80th percentile was 1.66 (versus our 1.79).

## MnPASS Corridor Use

**Table 12-12:** Corridor Use by Vehicles

| Direction | Time of Day | Location | SOVs (includes HOVs using GP lanes) | HOVs | Tolled | Transit | Average Vehicle Occupancy |
|---|---|---|---|---|---|---|---|
| **I-394** | | | | | | | |
| Eastbound | AM | Penn Ave | 5,013 | 960 | 955 | 88 | 1.16 |
| Westbound | PM | Penn Ave | 5,985 | 758 | 547 | 79 | 1.16 |
| Eastbound | AM | Louisiana Ave | 3,720 | 593 | 523 | 69 | 1.17 |
| Westbound | PM | Louisiana Ave | 5,400 | 358 | 327 | 64 | 1.15 |
| | | | I-35W | | | | |
| Northbound | AM | Black Dog Rd | 4,088 | 850 | 577 | 29 | 1.18 |
| Southbound | PM | Mn River | 5,050 | 902 | 272 | 21 | 1.28 |
| Northbound | AM | Lake Street | 6,859 | 646 | 312 | 88 | 1.10 |
| Northbound | PM | Lake Street | 4,967 | 644 | 62 | 5 | 1.25 |

Source: MnDOT I-35W and I-394 HOV/MnPASS Reports 2013-3rd Quarter; Hour reported is hour serving most people.

**Table 12-13:** Corridor Use by People

| Direction | Time of Day | Location | People in SOVs (includes HOVs using GP lanes) | People in MnPASS Lane as HOVs | People in MnPASS Lane as Tolled | People in Transit in MnPASS Lane |
|---|---|---|---|---|---|---|
| I-394 | | | | | | |
| Eastbound | AM | Penn Ave | 5,067 | 2,016 | 955 | 2,852 |
| Westbound | PM | Penn Ave | 6,308 | 1,592 | 547 | 2,479 |
| Eastbound | AM | Louisiana Ave | 3,876 | 1,245 | 523 | 2,174 |
| Westbound | PM | Louisiana Ave | 5,896 | 752 | 327 | 1,906 |
| I-35W | | | | | | |
| Northbound | AM | Black Dog Rd | 4,141 | 1,785 | 577 | 820 |
| Southbound | PM | Mn River | 5,800 | 1,894 | 272 | 583 |
| Northbound | AM | Lake Street | 6,946 | 1,357 | 312 | 2715 |
| Northbound | PM | Lake Street | 5,705 | 1,352 | 62 | 68 |

Source: MnDOT I-35W and I-394 HOV/MnPASS Reports 2013-3rd Quarter; hour reported is hour serving most people.

## Number of Person Trips by Mode

**Table 12-14:** Person Trips by Mode

| Person Trips by Mode | Forecast 2010 Existing to 2040 Current Revenue Scenario | 2040 Current Revenue Scenario Compared to TIP Scenario |
|---|---|---|
| Non-Motorized | 46.8 | -0.10% |
| Drive Alone | 29.9 % | -0.50% |
| Carpool | 22.1% | 0.12% |
| Transit | 80.1% | 6.68% |
| Total | 28.7% | -0.04% |

Source: Regional Travel Demand Forecast Model

**Investment plan analysis:** The percent change between forecast 2010 and the forecast current revenue scenario is largely driven by the overall growth of the region. The greater growth in non-motorized person trips and transit person trips is a function of increased population, households, and employment in the center cities and the implementation of the transit improvements listed in the plan. The Current Revenue Scenario shows the benefits of the planned improvements, but holding the level of population, households and employment constant at 2040 levels between the two alternatives. This shows a decline in single-occupant vehicles and an increase in multi-occupant vehicle person trips. It also shows an increase in the level of transit person trips.

## Transit Ridership

**Table 12-15:** Annual Regional Transit Ridership, 2006-2011

| Year | Annual Ridership |
|---|---|
| 2011 | 93,915,000 |
| 2010 | 91,065,300 |
| 2009 | 88,930,900 |
| 2008 | 94,769,700 |
| 2007 | 88,943,300 |
| 2006 | 85,308,100 |

Source: 2012 Transportation System Performance Evaluation

**Recent trend analysis:** Transit ridership has generally shown an upward trend between 2005 and 2011, basically staying on the track needed to reach the goal of doubling ridership by 2030.

**Investment plan analysis:** The modeled change in transit boardings between 2010 and the 2040 Current Revenue Scenario is largely driven by the overall growth of the region and increases over 79.4%. The Current Revenue Scenario exhibits a higher use of transit with over 8.5% more boardings than the Transportation Improvement Program scenario.

## Competitive Economy Performance Measures

### Freight – Annual Hours of Truck Delay (AHTD)

Need to develop database to generate measure – will probably use National Highway System travel time data set provided by FHWA.

### Freight – Truck Reliability Index (RI80)

Need to develop database to generate measure – will probably use National Highway System travel time data set provided by FHWA.

### Network Travel Time – Average

**Investment plan analysis:** The modeled travel time the average vehicle trip takes rose 6.5 minutes between 2010 and the 2040 Current Revenue Scenario, an increase of over 50%. The Current Revenue Scenario exhibits a slight decline of -1.2% in average travel time when compared to the Transportation Improvement Program scenario.

## Healthy Environment Performance Measures

### Total Average Weekday Vehicle Miles Traveled

**Investment plan analysis:** Current Revenue Scenario exhibits a decrease in VMT with almost 421,000 fewer vehicle miles traveled (-0.4%) when compared to the Transportation Improvement Program scenario. Total VMT does grow between 2010 and 2040 due to increases in population and employment, though the growth is at a 50% lower rate than has been observed in the past. When expressed as VMT per capita, the change between 2010 and 2040 is virtually nil at less than 0.2%.

### Criteria Pollutant Emissions

**Investment plan analysis:** MOVES 2014 was used to estimate the air pollutant emissions from mobile sources for carbon monoxide, oxides of nitrogen, sulfur dioxide, volatile organic compounds, and PM2.5. The Current Revenue Scenario results in less modeled air pollutant emissions in each of these categories when compared to the Transportation Improvement Program scenario. The change for each pollutant is as follows:

| Pollutant | Difference from TIP Scenario |
|---|---|
| Carbon Monoxide | -0.3% |
| Oxides of Nitrogen | -0.7% |
| Sulfur Dioxide | -0.3% |
| Volatile Organic Compounds | -0.6% |
| PM2.5 | -0.2% |

### Green House Gas Emissions from Mobile Sources

**Investment plan analysis:** MOVE2014 was used to estimate the emissions from mobile sources for atmospheric carbon dioxide and CO2 equivalents. The Current Revenue Scenario results in 0.4% less modeled emissions in each of these categories when compared to the Transportation Improvement Program scenario.

## Summary of Investment Plan Impacts

As previously stated, the impacts of the investments proposed in the *2040 Transportation Policy Plan* are measured against the Transportation Improvement Program scenario. Although targets for the measures use have not been defined, the direction of the trend of the measures is sufficient to determine the general positive or negative impacts of the proposed improvements. The findings are as follows:

- Congestion – The investment plans result in an overall decrease in the number of lane-miles of the National Highway System experiencing congestion in both the AM (-2.8%) and PM (-1.7%) peak periods.
- Mode Choice – Mode choice shows a decline in single-occupant vehicles and an increase in multi-occupant vehicle person trips. It also shows an increase in the level of transit person trips.
- Transit Ridership – The Current Revenue Scenario exhibits a higher use of transit with over 8.5% more boardings than the Transportation Improvement Program Scenario.
- Safety – The investment plans result in an overall decrease of the annual total number of crashes experienced, a decrease of just over 400 crashes (-0.7%).
- Travel Time – The Current Revenue Scenario exhibits a slight decline, -1.2%, in average travel time from the Transportation Improvement Program scenario.
- Total Vehicle Miles Traveled – The Current Revenue Scenario exhibits a slight decline in VMT from the Transportation Improvement Program Scenario of almost 421,000 fewer vehicle miles traveled (-0.4%).
- Criteria Air Pollutants – The Current Revenue Scenario results in less modeled air pollutant emissions for carbon monoxide, oxides of nitrogen, sulfur dioxide, volatile organic compounds, and PM2.5.
- Green House Gas Emissions – The Current Revenue Scenario results in 0.4% less modeled emissions in each of these categories when compared to the Transportation Improvement Program Scenario.

Generally, the Current Revenue Scenario results in more transit trips and fewer single-occupant vehicle trips. This results in less congestion and less travel time (primarily in the peak period). The change in mode also works to reduce the vehicle-miles-traveled and the resulting air pollutant emissions.

## Work Plan Tasks

Several measures have been identified as needing additional data or further refinement before they can be used. This includes all of the performance measures that USDOT is required to develop in MAP-21 as these will not be released in final form until 2015.

Given these issues with performance measures, a work group should be established or identified to assist Council staff in the development and refinement of useful performance measures and in the development and selection of targets for the USDOT performance measures. In recommending performance measures the work group will consider the availability of data and provide input on how the data is, or should, be obtained and analyzed. Possible measures falling into this group include (but are not limited to) the following:

- Truck delay
- Truck Reliability Index
- Pavement condition of A-minor arterials
- Congestion of A-minor arterials
- MnPASS corridor usage
- Change in population/employment in the vicinity of LRT and BRT stations
- Extent and usage of bus-only shoulders
- Transit asset management
- Extent and usage of bicycle facilities
- Extent and usage of pedestrian trail facilities

# Congestion Management Process (CMP)

Federal regulations (U.S.C. Title 23, Sec. 134) require that the transportation planning process in a Transportation Management Area "address congestion management through a process that provides for effective management and operation, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under this title and chapter 53 of title 49 through the use of travel demand reduction and operational management strategies."

The Congestion Management Process (CMP) incorporates and coordinates the various activities of the Council, MnDOT, transit providers, counties, cities and Transportation Management Organizations (TMOs) in increasing the efficiency of the multimodal transportation system, reducing vehicle use by providing alternate modes, and providing lower-cost safety and mobility projects where feasible. It relies on the policy guidance and strategies included in the region's Transportation Policy Plan. The CMP will ensure that the key objective of mitigating congestion impacts is achieved and that congestion mitigation investments are properly monitored and evaluated.

The CMP ensures coordination of activities under the umbrella of the well-established and federally required continuing, comprehensive, and cooperative (3C) metropolitan transportation planning process in which all the above stakeholders participate. The Council, the Transportation Advisory Board and its Technical Advisory Committee provide the necessary forums to coordinate the CMP activities.

The *2030 Transportation Policy Plan* (adopted November 2010) included the required CMP, but the elements of the suggested process were spread throughout the document. This iteration brings all of the federally suggested steps into one section for clarity. Federal guidance outlines an eight-step process for the development and implementation of a CMP.

- Develop regional congestion management objectives
- Identify area of application and define system/network of interest
- Develop multimodal performance measures
- Collect data and monitor system performance
- Analyze congestion problems and needs
- Identify and assess strategies
- Implement selected strategies/manage system
- Monitor strategy effectiveness

The CMP assumes that it will not be possible to eliminate congestion on the principal arterial system or even to significantly reduce it through general-purpose-lane expansion because of financial and physical constraints and desired outcomes for the region's social and natural environments. Instead, the principal arterial system must be managed and optimized to the greatest extent possible. The CMP recognizes that congestion in principal arterial general purpose lanes should and can be mitigated if travel alternatives are provided such as MnPASS

lanes, transit services and facilities, bicycle and pedestrian facilities, and travel demand patterns are changed with support from appropriate local land use policies. It recognizes the new and innovative investment approach implemented in the *2030 Transportation Policy Plan* (2030 TPP) that allocated limited resources for the most system-wide benefit.

In essence, the CMP emphasizes five alternatives to congestion in general purpose principal arterial lanes. Each alternative will be discussed in a later section:

- Highway system management
- Intelligent transportation systems
- Travel demand management
- Transit opportunities
- Land use policy

## Step 1: Congestion Management Objectives

The *2040 Transportation Policy Plan* and the 2030 TPP both include goals and/or objectives addressing highway congestion management and the region's desires for future congestion. These goals and objectives clearly lay out the philosophy and principles for the Congestion Management Process. This process recognizes that eliminating congestion is not feasible. The direction the region has taken, and will continue to take in managing congestion is to provide and encourage use of alternatives to congested travel where congestion is worst and work to reduce the uncertainty in trip duration that results from congestion.

### *2040 Transportation Policy Plan*

The *2040 Transportation Policy Plan* has three goals that are strongly oriented towards managing highway congestion:

Transportation System Stewardship – Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets

Access to Destinations – People and businesses prosper by using a reliable, affordable, and efficient multimodal transportation system that connects them to destinations throughout the region and beyond

Competitive Economy – The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state

A fourth 2040 TPP goal tangentially involves congestion management, aligning with conditions that affect the variability and reliability of travel time.

Safety and Security – The regional transportation system is safe and secure for all users.

Congestion management is further discussed in the objectives for the TPP goals. The first two objectives under the goal of Access to Destination speak directly to this point:

- "Increase the availability of multimodal travel options, especially in congested highway corridors"
- "Increase travel time reliability and predictability for travel on the highway and transit systems"

The second objective for Transportation System Stewardship states:

- "Operate the regional transportation system to efficiently and cost-effectively move people and freight"

The third objective for Competitive Economy states:

- "Support the region's economic competitiveness through the efficient movement of freight"

The first objective for Safety and Security states:

- "Reduce crashes and improve safety and security for all modes of passenger travel and freight transport"

The second objective for Safety and Security states:

- "Reduce the transportation system's vulnerability to natural and man-made incidents and threats"

### *2030 Transportation Policy Plan*

The CMP in the *2030 TPP* identified five goals, many of which were carried forward in one form or another into the *2040 Transportation Policy Plan*:

- Increase people-moving capacity
- Provide alternatives to traveling in congested conditions
- Implement strategic and affordable investments to manage existing facilities
- Increase trip reliability for corridor users
- Encourage increased transit use

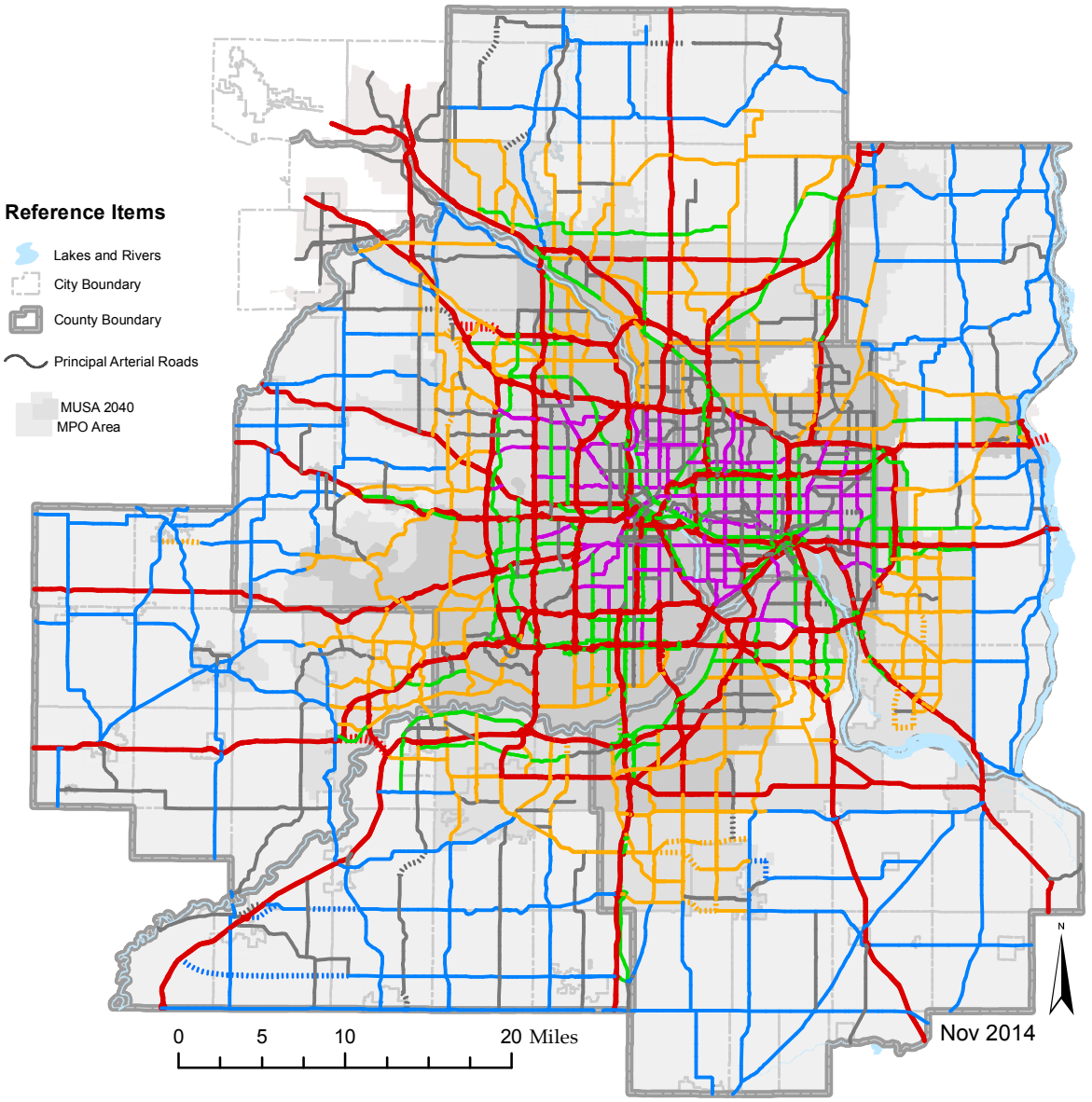
## Step 2: Area and Network Affected by Congestion Management Process

Transportation Policy Plan goals and objectives help define the geographic coverage of the CMP and the network of interest. The Access to Destinations goal indicates that its area of focus is not only the region, but also the connections to areas outside the region (and beyond). One of the related objectives directs the focus to congested corridors.

This indicates that the CMP should cover the region as a whole, as well as the connections to areas beyond the seven-county region. The CMP focuses on congested principal arterials and the A-minor arterials that support them. Functional classifications are discussed in Appendix D.

**Figure 12-1:** Principal and A-Minor Arterial Highways

## Functional Class Roads




**Existing**

- Principal Arterial
- A-Minor Augmentor
- A-Minor Reliever
- A-Minor Expander
- A-Minor Connector
- Other Minor Arterial

**Planned**

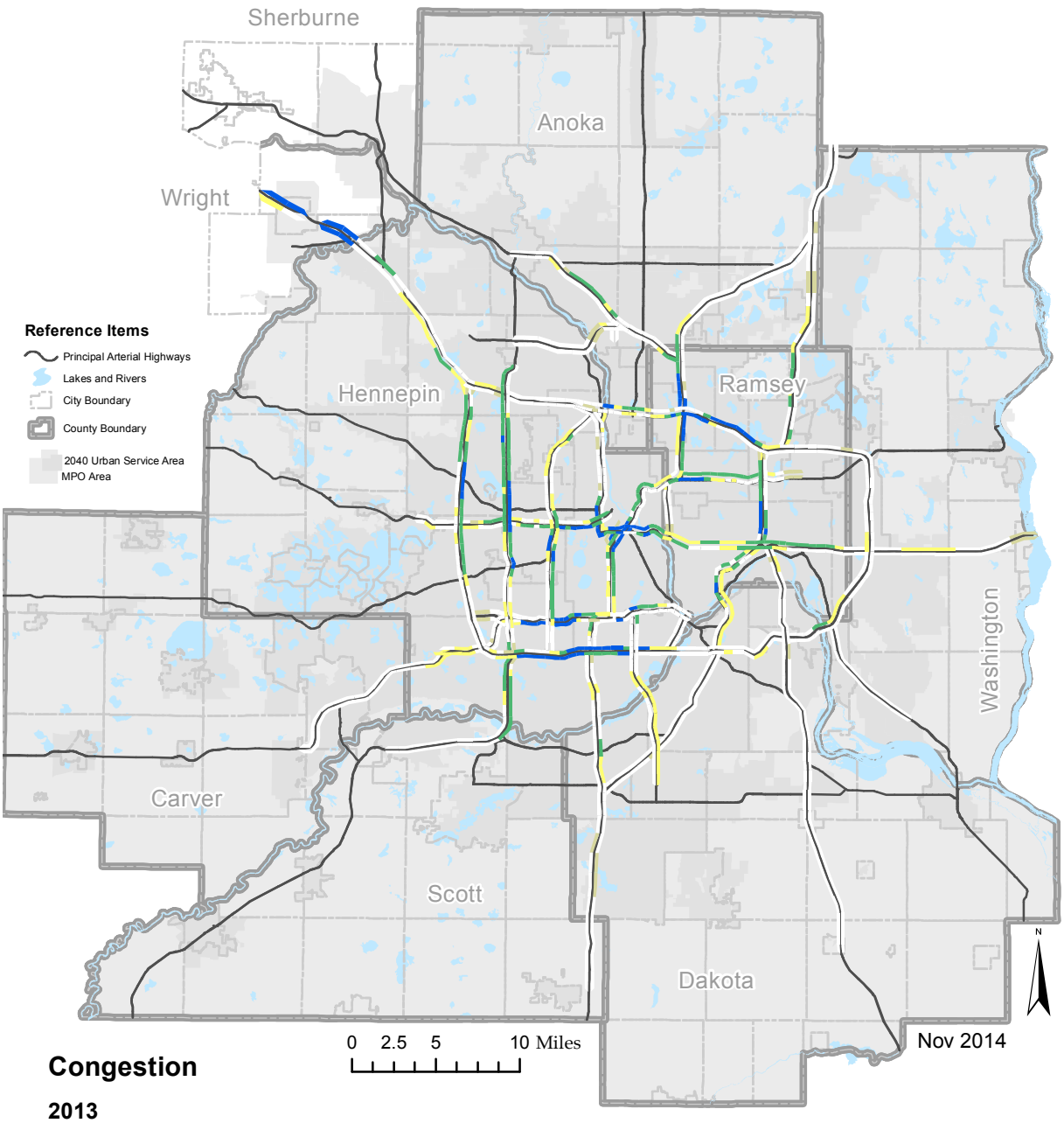
- Principal Arterial
- A-Minor Augmentor
- A-Minor Reliever
- A-Minor Expander
- A-Minor Connector
- Other Minor Arterial

**Thrive Planning Areas**

- Urban Core & Urban & Suburban
- Suburban Edge & Emerging Suburban Edge
- Rural Service Areas
- MPO Area outside the Seven County Area

**Figure 12-2:** 2013 Metro Freeway Congestion

## 2013 Congestion



Non-freeway principal and A-minor arterials are also part of the Regional Highway System. This portion of the roadway network is not covered by the monitoring systems implemented through the MnDOT Regional Traffic Management Center (RTMC). Also, the majority of the roads that fall into this category are under city or county jurisdiction. MnDOT operates a number of non-freeway trunk highways in the metropolitan area. Metro District Traffic Engineering is primarily responsible for the design, operation, and maintenance of Metro District's traffic control devices and providing traffic engineering support and expertise to other functional offices and road authorities to create a safe and efficient transportation system. They do not currently produce an annual congestion report as does the RTMC. However, they are currently working with the University of Minnesota to produce a similar congestion report with completion anticipated in 2015.

Given these data limitations, the collection of data on existing congestion and the ongoing monitoring of system performance will be implemented in phases. Data collection and ongoing monitoring are both currently conducted by MnDOT for the MnDOT principal arterials. This resource is the base upon which further expansions of collection and monitoring efforts will build.

## Step 3: Multimodal Performance Measures

Performance measures are a critical component of the CMP and are used to characterize current and future conditions on the multimodal transportation system in the region. They serve multiple purposes that intersect and overlap in the context of the CMP, including:

- Characterize existing and anticipated conditions on the regional transportation system
- Track progress toward meeting regional objectives
- Identify specific congested locations to address
- Assess congestion mitigation strategies, programs, and projects and
- Communicate system performance to decision-makers and the public

Performance measures are used at two levels: regional and local. At the regional level, they measure performance of the regional transportation system. But at the local level, they identify specific locations with congestion problems and measure the performance of individual segments or system elements.

It is important that the measures used address the four major dimensions of congestion:

- Intensity – The relative severity of congestion that affects travel; Intensity has traditionally been measured through indicators such as V/C ratios or LOS measures that consistently relate the different levels of congestion experienced on roadways
- Duration – The amount of time the congested conditions persist before returning to an uncongested state
- Extent – The number of system users (SOV, HOV, transit, commercial vehicles) or components affected by congestion, for example the proportion of system network components that exceed a defined performance measure target
- Variability – The changes in congestion that occur on different days or at different times of day; when congestion is highly variable due to non-recurring conditions this has an impact on the reliability of the system conditions which may contribute to high variability in travel times and low reliability include (but not limited to):
  - Incidents
  - Weather
  - Special events
  - Inadequate base capacity
  - Work zones
  - Random fluctuation in demand
  - Traffic control devices

Performance measures were reviewed and prioritized using input from city, county and state agency staff and policymakers involved in the *2040 Transportation Policy Plan*. The performance measures proposed for use and continued development in the Congestion Management Process are as follows:

- Intensity, Extent and Duration of Congestion
- Reliability Index
- Annual Hours of Delay
- Annual Hours of Delay per Capita
- Corridor Person Throughput by Mode
- MnPASS Lane and Corridor Use by Vehicles
- Total Vehicle-Miles Traveled (VMT)
- Total VMT per Capita
- MnPASS Delay and Reliability versus General Purpose Lanes

Five performance measures were used in the CMP in the *2030 TPP* and are also carried forward in this CMP:

- Person Throughput
- Travel Time Savings
- Cost Effectiveness
- Reductions in Trip Delays in Managed Lanes
- Transit Suitability Assessment

## Step 4: Collect Data and monitor system performance

Data for the performance measures selected for use in the CMP are all available for the instrumented principal arterial system from existing sources or are a product of the regional travel demand model. The primary source of data for the principal arterial system is the large database maintained by MnDOT's RTMC. For many years, MnDOT has been monitoring congestion levels on the principal arterials in Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties. Annually MnDOT releases the Metropolitan Freeway System Congestion Report. The most current report was released in January 2013 and is based on 2012 data (see Figure 12-2). Table 12-16 tabulates the miles of directional congestion observed in the region over the last decade. MnDOT also reports quarterly on the performance of the HOV/MnPASS lanes on I-35W and I-394. These reports aggregate data by vehicles and people for the MnPASS and general purpose lanes.

MnDOT evaluates 758 directional miles of the Twin Cities urban freeway system to tabulate the AM and PM percentages of directional congestion. The definition of a congested condition used by MnDOT is based on speed. A section of road is considered to be congested if it operates at speeds below 45 miles per hour for any length of time during the AM and PM peak periods. Mainline detectors are located in each lane of a freeway at approximately one-half mile intervals. Individual lane detectors located at a given location along the same direction of the freeway constitute a station. For the purpose of the MnDOT report, if any station's detectors experience congestion at any given time, the station is identified as congested.

More detailed information on the detector system is available in MnDOT's Metropolitan Freeway System Congestion Report. The following tables generated from data in MnDOT's report tabulate the directional miles of congestion into three categories: severe, moderate, and low. These are defined as follows:

- Severe – Congested for more than two hours
- Moderate – One to two hours congested
- Low – Congested for less than one hour

**Table 12-16:** AM Plus PM Miles of Directional Congestion

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| Severe | 83 | 72 | 83 | 64 | 82 | 51 | 55 | 82 | 73 | 85 |
| Moderate | 105 | 105 | 94 | 97 | 112 | 104 | 107 | 127 | 125 | 128 |
| Low | 106 | 104 | 101 | 107 | 111 | 108 | 114 | 117 | 121 | 113 |
| Total | 293 | 280 | 277 | 267 | 305 | 263 | 276 | 326 | 319 | 325 |

The Regional Travel Demand Model is also used to evaluate the impact of potential road and highway improvements on the system. This modeling tool is built on a large database of information on regional travel patterns and behavior collected through the *2010 Travel Behavior Inventory*. Data on transit system performance and usage is provided by Metro Transit and suburban transit providers through regular reports and supplemented by the Regional Travel Demand Model for information on potential improvements to the transit system.

The data required to model the highway and transit networks include the following items:

- Roadway classifications
- Number of lanes
- Freeflow speeds
- Bus routes and schedules
- Light rail transit routes and schedules
- Commuter rail route and schedule

The Metropolitan Council maintains the socioeconomic and demographic database at a Transportation Analysis Zone (TAZ) level covering the seven counties in the Twin Cities planning area plus 13 counties surrounding the planning area. The data tabulated by TAZs include:

- Population
- Households
- Retail employees
- Non-retail employees

Using these data elements to monitor system performance will be an ongoing annual task to support the planning and programming process implemented through the Metropolitan Council and Transportation Advisory Board.

## Step 5: Analyze Congestion Problems and Needs

This section discusses the level of congestion experienced and forecast for the Twin Cities planning area. Congestion levels are first benchmarked against congestion in peer regions using data from the Texas Transportation Institute's Urban Mobility Report. This report provides a consistent set of data across the regions included in the report and provides data back to 1982.

### Comparison to Peer Regions

The Texas Transportation Institute regularly produces the Urban Mobility Report. This report provides an in-depth analysis of congestion and its impacts for 101 urban areas. The urban areas are categorized (based on population) as follows:

- Very Large Urban Areas – over 3 million population (15 areas included in study)
- Large Urban Areas – over 1 million and less than 3 million population (33 areas included in study)
- Medium Urban Areas – over 500,000 and less than 1 million population (32 areas included in study)
- Small Urban Areas – less than 500,000 million population (21 areas included in study)

The Twin Cities region is one of the areas covered in-depth in the study and is categorized as a "Large Urban Area" in the Texas Transportation Institutes Urban Mobility Report. This report is a primary data source for the *2012 Transportation System Performance Evaluation* (TSPE) produced by the Metropolitan Council prior to each major revision of the Transportation Policy Plan. By state statute, this evaluation report is required to:

- Evaluate the area's ability to meet the need for effective and efficient transportation of goods and people
- Evaluate trends and their impacts on the area's transportation system
- Assess the region's success in meeting the currently adopted regional transportation benchmarks and
- Include an evaluation of the regional transit system, including a comparison with peer metropolitan regions with regard to key operating and investment measurements

The Transportation System Performance Evaluation identifies 10 peer regions which are also used here to put the travel and congestion levels of the Twin Cities region into a larger perspective:

- Baltimore
- Milwaukee
- Cincinnati
- Pittsburgh
- Cleveland
- Portland, OR
- Dallas - Fort Worth
- Seattle
- Denver - Aurora
- Saint Louis

Table 12-17 provides a comparison of the population, daily vehicle-miles-traveled (total and per capita), and travel time index for the Twin Cities region and the 10 peer regions.

**Table 12-17:** Comparison of Daily VMT and Travel Time Index

| Metropolitan Area | 2011 Population (1000s) | 2010 Urbanized Land Area (Square Miles) | 2011 Daily VMT (Freeway + Arterial) (1000s) | 2011 Daily VMT per Capita | 2011 Travel Time Index |
|---|---|---|---|---|---|
| Twin Cities | 2,757 | 1,022 | 54,302 | 19.7 | 1.21 |
| Baltimore | 2,523 | 717 | 45,143 | 17.9 | 1.23 |
| Cincinnati | 1,717 | 788 | 32,693 | 19.0 | 1.2 |
| Cleveland | 1,700 | 772 | 30,791 | 18.1 | 1.16 |
| Dallas-Fort Worth | 5,260 | 1,779 | 106,612 | 20.3 | 1.26 |
| Denver-Aurora | 2,348 | 668 | 43,780 | 18.6 | 1.27 |
| Milwaukee | 1,496 | 546 | 26,085 | 17.4 | 1.15 |
| Pittsburgh | 1,761 | 905 | 27,649 | 15.7 | 1.24 |
| Portland, OR | 1,925 | 524 | 29,123 | 15.1 | 1.28 |
| Seattle | 3,286 | 1,010 | 61,035 | 18.6 | 1.26 |
| Saint Louis | 2,343 | 924 | 49,950 | 21.3 | 1.14 |
| Peer Average | 2,436 | 863 | 45,286 | 18.6 | 1.22 |
| Large Area Average | 1,609 | NA | 29,692 | 18.5 | 1.20 |

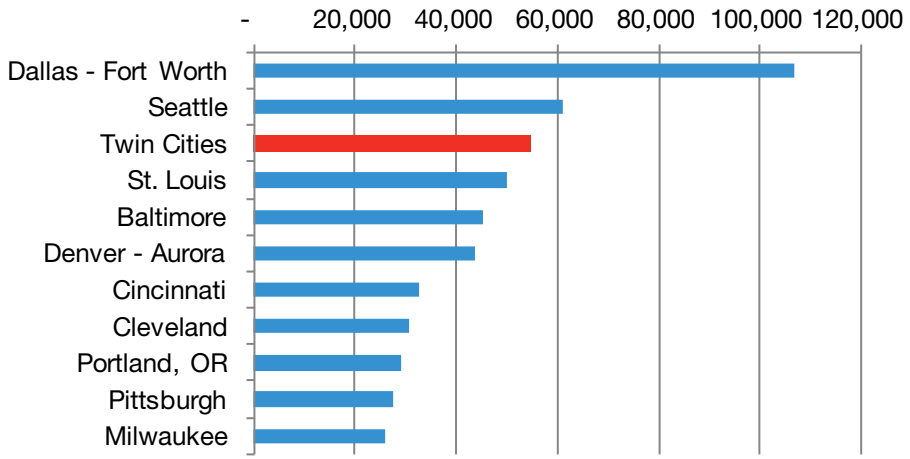
Source: Texas Transportation Institute, *2012 Urban Mobility Report* and 2010 US Census

The Twin Cities' peer regions evaluate mobility and congestion performance measures as part of their CMPs. However, comparing these measures across regions is difficult given the many different measures and methodologies used to evaluate congestion. The Texas Transportation Institute annually publishes the Urban Mobility Report that assesses 101 urban areas across the country. This provides a consistent set of performance measures that can be used to compare the Twin Cities against its peer regions.

## Travel Estimates

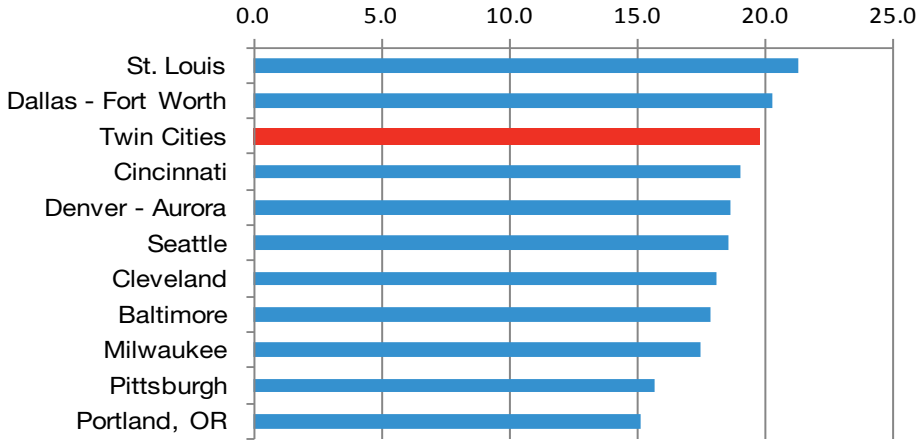
In terms of total travel, the Twin Cities region comes in third among its peers, with the Dallas-Ft. Worth region producing far more daily vehicle-miles-traveled. The VMT reported ranges from a daily high of over 106,612,000 VMT to 28,085,000. The average of the region's 10 peers is 45,286,000 daily VMT compared to 54,302,000 daily VMT produced in the Twin Cities region. This represents a rate 20% greater than the peer average.

**Figure 12-3:** Vehicle Miles Traveled - VMT in 1,000s




However, the Dallas-Ft. Worth region (despite being considered a peer due to its mid-continent location, lack of constraining barriers, and similar travel mode options) is categorized by the TTI report as a "Very Large Urban Area" with a population of over 3 million. Normalizing the VMT data by the population provides a slightly different relationship to the Twin Cities region.

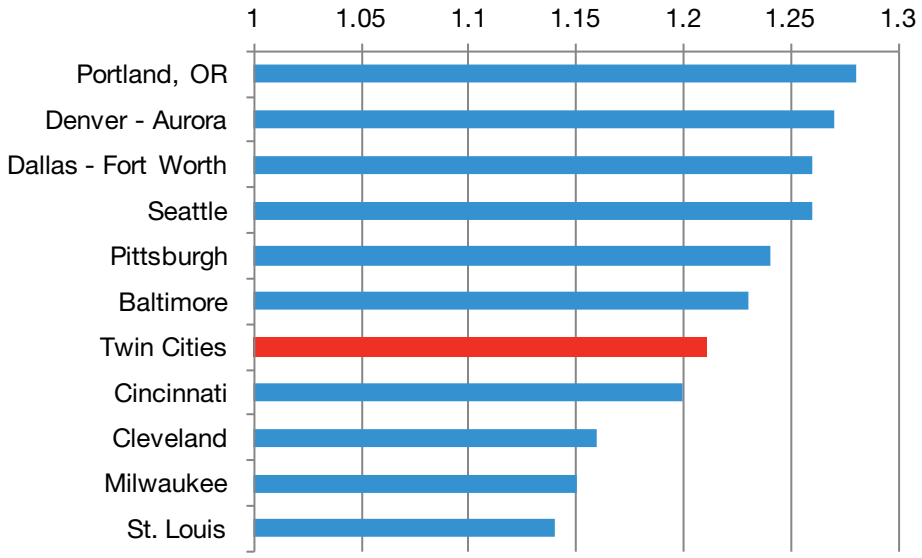
**Figure 12-4:** Daily Vehicle Miles Traveled per Capita




The Twin Cities still ranks third, but here the values range from a high of 21.3 VMT per capita to a low of 15.1 VMT per capita. The average of the region's 10 peers is 18.6 VMT per capita compared the Twin Cities' 19.7. This represents a rate only 6% higher than the peer average.

Despite this greater level of VMT production (in both terms of total VMT and VMT per capita) the road and highway system of the Twin Cities region performs well relative to its peers. The Urban Mobility Report Travel Time Index (TTI) compares peak-period travel time to free-flow travel time. It includes both recurring and incident conditions. Thus if a region has a Travel Time Index of 1.2, a 20-minute trip in free-flow conditions can be expected to take an average of 24 (20 times 1.2) in the peak period.

**Figure 12-5:** Travel Time Index




In this measure, the Twin Cities region falls to 7th place. The values for the TTI ranges from a high of 1.28 to a low of 1.14, with a peer average of 1.22. The TTI for the Twin Cities falls just below this at 1.21.

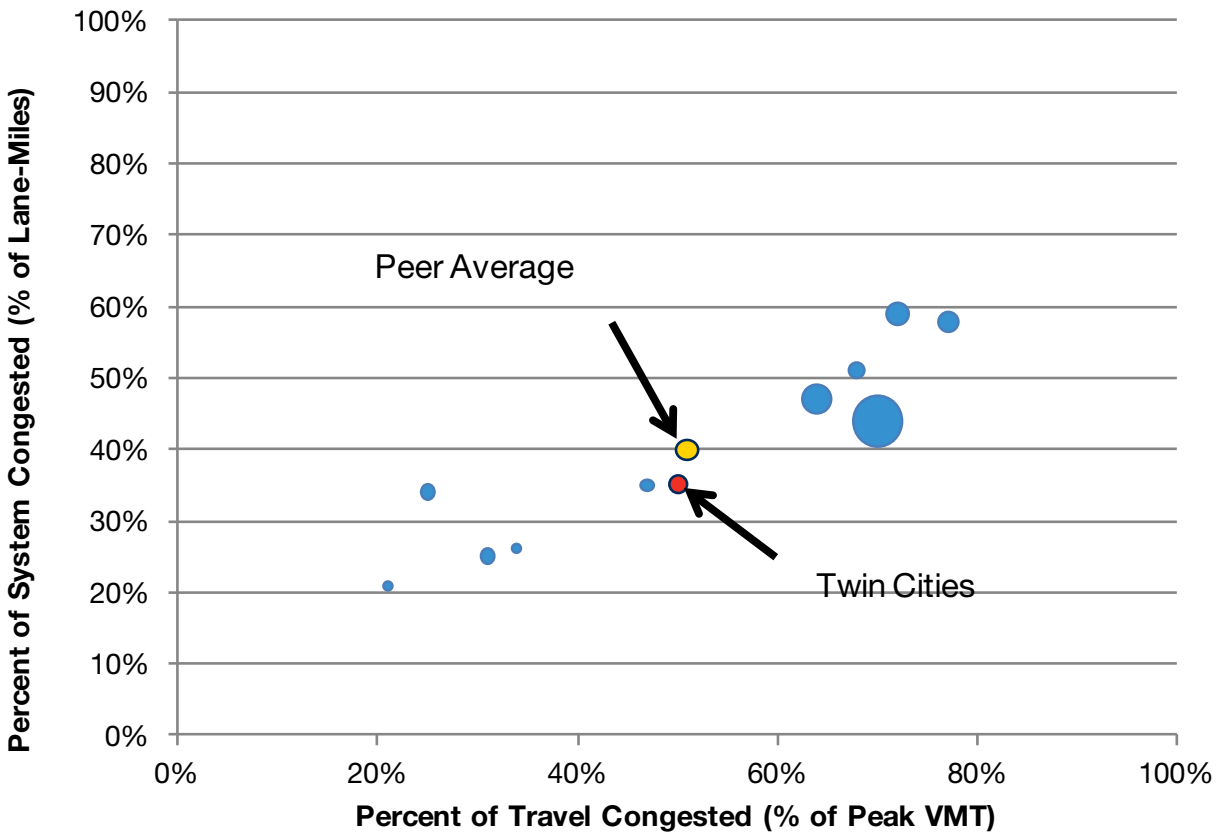
## System Congestion

Figure 12-6 presents three indicators of total congestion for the Twin Cities Region and its 10 peer cities:

- The percent of peak travel that is in congested conditions (x-axis);
- The percent of the system that is congested (y-axis); and
- Total delay (bubbles are sized based on total annual person-hours of delay)

The Twin Cities is shown in red and the average for the 10 peer cities is shown in orange. By percent of travel or congested system, the Twin Cities exhibits a fairly average level of congestion, actually falling below the trendline for the data. Among the region's peers, five generally exhibit higher measures of congestion and five have lower levels of congestion. Of the five that exhibit higher congestion measures, only one (Portland) generates fewer annual hours of delay (14% less) due to congestion. But then, Portland has 30% less population than the Twin Cities according to the Urban Mobility data.

**Figure 12-6:** Measure of Systemwide Congestion among Peer Regions



## Step 6: Identify and Assess Strategies

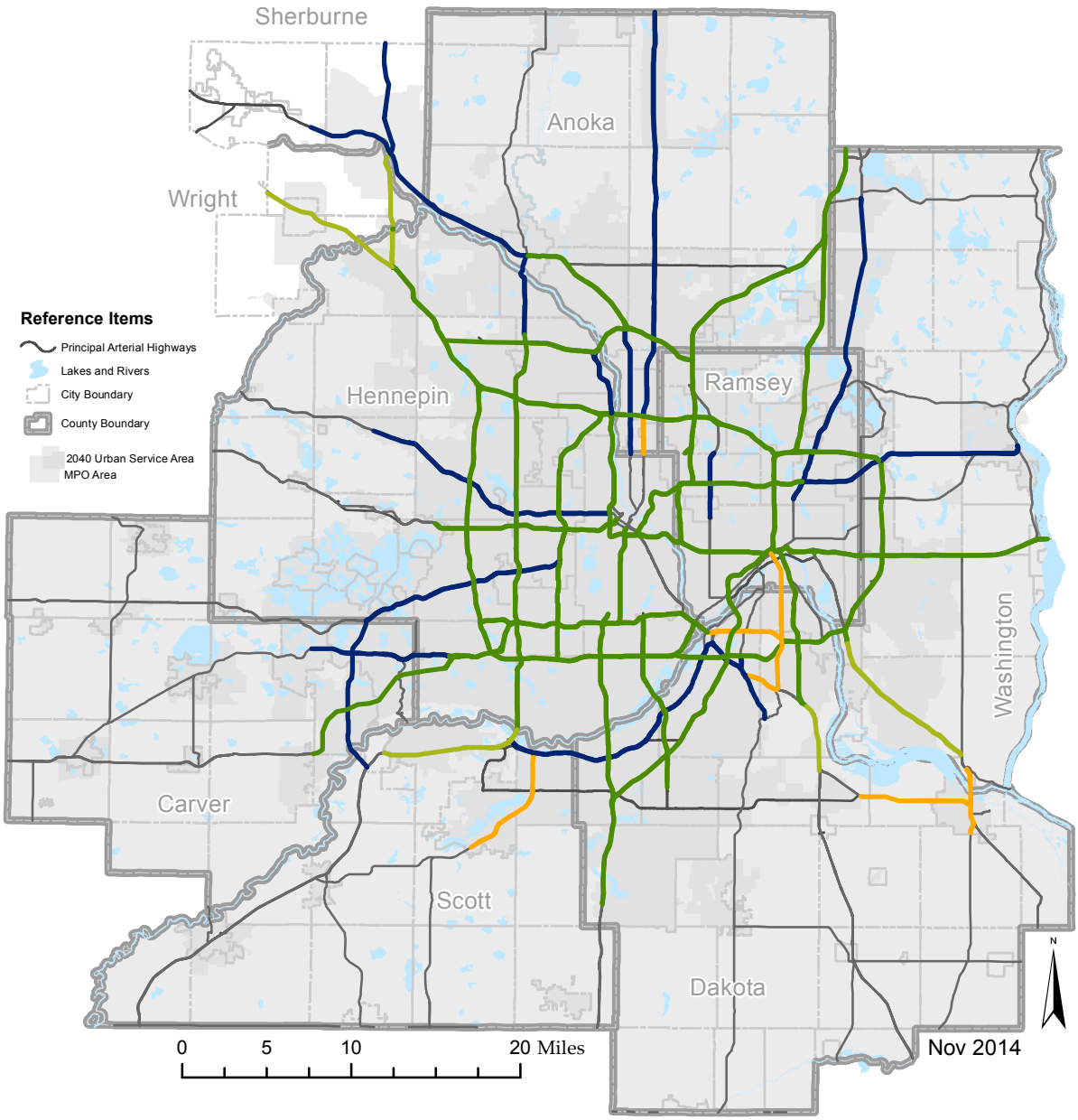
### Highway System Management

Highway system management is the umbrella of infrastructure strategies to improve traffic operations from the supply side of capacity. The approach for this region, as recommended through the *Metropolitan Highway System Investment Study* (MHSIS) (September 2010) and other studies discussed later, includes a number of existing or innovative strategies such as:

- Implementing traffic operational improvements using Active Traffic Management (ATM) and Intelligent Transportation Systems (ITS) applications (see Figure 12-7)
- Developing spot mobility improvements which include lower-cost/high-benefit projects to improve existing traffic flow, geometric design, and eliminate safety hazards (see Figure 12-8)
- Implementing a system of MnPASS lanes to provide a congestion-free option for people who ride transit, carpool, or are willing to pay. (See Figure 12-9)
- Building strategic capacity enhancement projects

**Figure 12-7:** Active Traffic Management System

## MnDOT Traffic Management Technology System



Highway mobility and congestion issues are best addressed by first using ATM strategies, which are generally lower cost and provide a higher return on investment. If the ATM strategies have been exhausted, spot mobility improvement options should be evaluated to determine whether they can cost-effectively address the mobility and congestion issues at a specific location. If a larger, longer-term lane capacity solution is needed, the potential for implementing MnPASS lanes should be evaluated. Only after exhausting or ruling out these strategies, should other strategic capacity enhancements be considered because of their higher cost/lower return on investment. Within all of these strategies, the following principles should be applied to improve efficiencies, optimize return on investment and minimize disruption to the traveling public:

- Perform improvements when preservation work is occurring in the corridor (i.e. opportunity-driven approach)
- Utilize existing infrastructure and right-of-way to the fullest extent possible
- Utilize performance-based design principles to the fullest extent possible
- Strive for shortest implementation timeframe possible
- Implement complete streets policies and transit advantage improvements to the fullest extent possible

The Twin Cities region is particularly well positioned to mitigate congestion and preserve a high level of regional mobility because the strategies proposed can build on improvements already in place. These include an actively managed freeway system equipped with electronic surveillance (i.e. fiber cable, loop detectors and cameras) on about 90% of the urban freeways. In addition, the region has the advantage of a sophisticated Regional Traffic Management Center (RTMC) that can be expanded to handle new traffic management applications. Other existing elements include an extensive bus-only shoulder system and two corridors with dynamically priced HOV/MnPASS lanes.

In addition, several implemented lower-cost/high-benefit projects have been publicly praised and have provided MnDOT with additional experience in flexible design applications. Examples include traffic restoration projects done in conjunction with the reconstruction of the I-35W bridge over the Mississippi River; shoulder conversions to through lanes on TH 100; adding through lanes and modifying interchange ramps on I-94 east of Saint Paul; the performance-based design of the I-694/Highway 10/Snelling Avenue interchange; the I-494 westbound auxiliary lane between I-35W and France Avenue; and signal timing to improve traffic flow on various highways in the metropolitan region.

The MnPASS lanes on I-394 and I-35W have proven very effective in improving highway and transit efficiency during peak congested periods. MnPASS lanes:

- Expand the people-moving capacity of the freeway system
- Offer commuters a faster, more reliable choice
- Improve bus transit service and increase ridership
- Improve park-and-ride use and increase car/vanpooling

The all-electronic dynamic pricing used in the MnPASS lanes will enable them to sustain the highway and transit benefits they provide for a long period of time.

Expanding the reliability and people-moving capacity of the freeway system is most effectively accomplished by adding MnPASS lanes. Select strategic capacity enhancements also can be effective options, including additional bus-only shoulder lanes, unpriced dynamic shoulder lanes, auxiliary lanes, improvements to existing interchanges, and new bridges for roads to pass over or under the freeway without accessing the freeway. Consideration must be given to the effect of such improvements on land use, travel demand, short- and long-term return on investment, and highway segments both upstream and downstream of the enhancement. The *2040 Transportation Policy Plan* does not anticipate building additional general purpose lanes on the freeway system.

**Figure 12-8:** Congestion Management and Safety Plan

## Spot Mobility Improvement Opportunity Areas

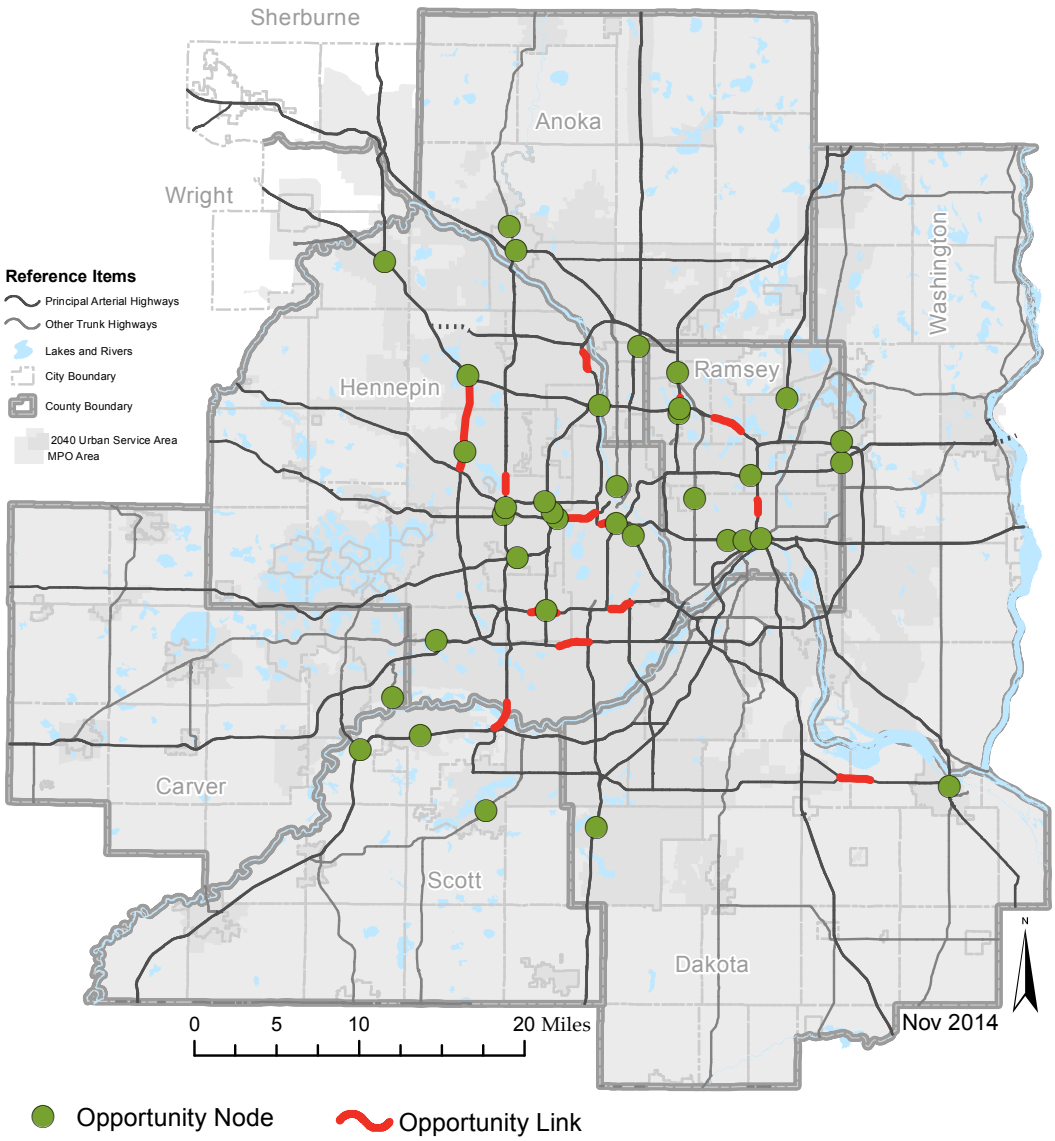
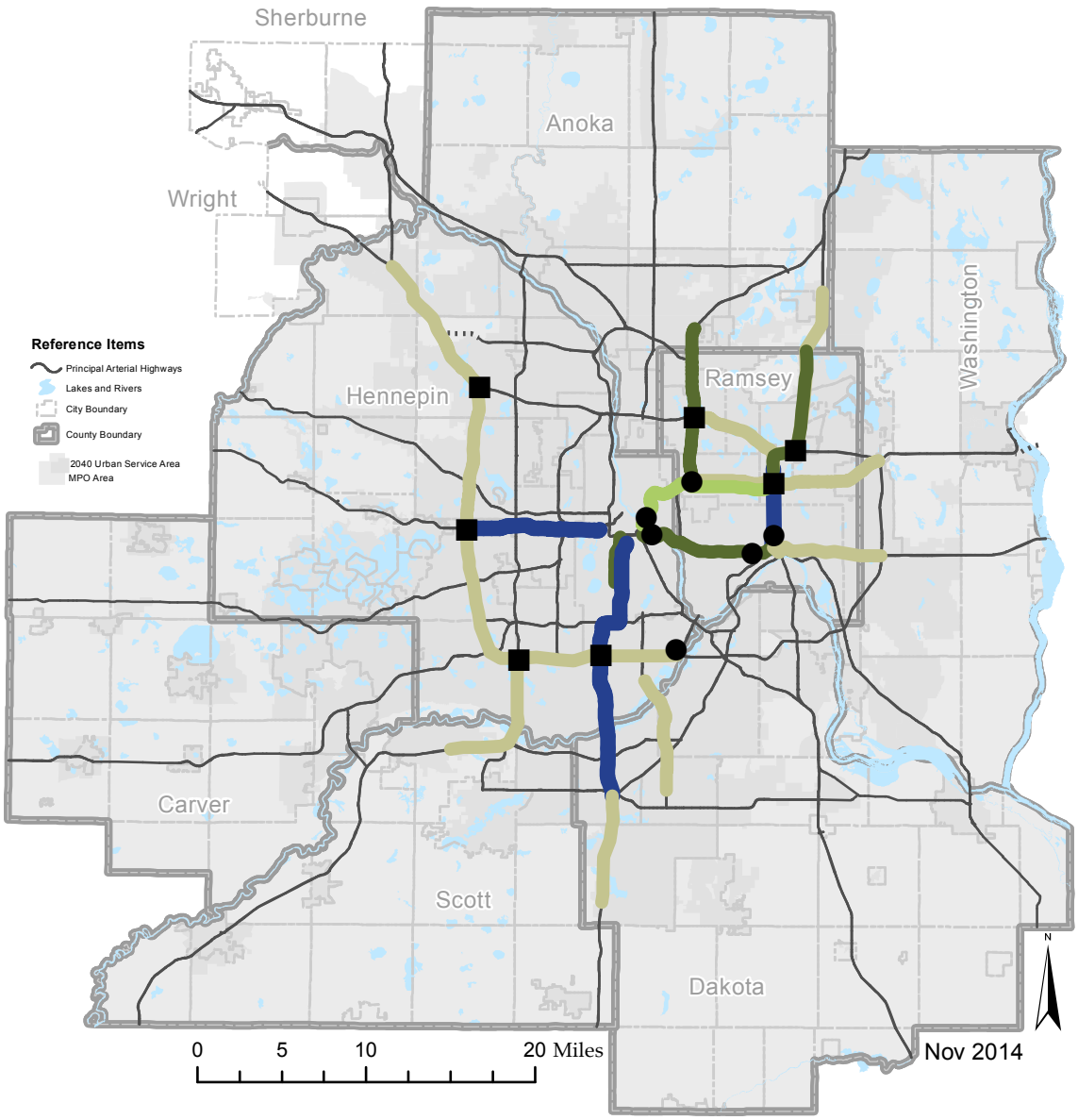


**Figure 12-9:** MnPASS System

## MnPass System Vision




**MnPASS**

- Existing / Under Construction
- Tier 1 MnPASS Expansion
- Tier 2 MnPASS Expansion
- Tier 3 MnPASS Expansion*

- Direct Connection
- Through Movement

** The I-94 east corridor is in the MnPASS system vision contingent on resolving highway right-of-way issues through further study, including the Gateway transitway Draft Environmental Impact Statement.*

Local comprehensive plans identify planned improvements for the principal arterial system owned by counties and for most of the supporting minor arterial system.

## Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) activities have been managed by MnDOT under the Minnesota Guidestar name. Since its inception in 1991, Minnesota Guidestar has performed a broad range of ITS activities including needs assessments, research and development, full-scale operational testing, and deployment of ITS strategies and technologies. Minnesota Guidestar has been a key player in advancing ITS technology and programs to help achieve statewide and local transportation objectives. This success continues because of Minnesota Guidestar's strong partnerships with the public sector, the private sector, and academia. It is because of these partnerships that Minnesota Guidestar has successfully produced innovative and unique programs and projects, some of which are described below.

Minnesota Guidestar Strategic Plans were issued in 1997, 2000, 2006 and 2010. These plans have provided statewide and local strategic direction to Minnesota Guidestar and have initiated more than 200 ITS programs, projects, and activities over the years.

Some of the more recent projects include the following:

### Arterial Real-Time Traveler Information Commercial Probe Data Project (completed in fall, 2012)

This project demonstrated an innovative, non-infrastructure-based, relatively low-cost approach to collect real-time traffic data on metro area arterials and in a rural interstate construction work zone, and provide real-time traffic information to motorists. Data provided augmented traffic data collected by MnDOT providing a broader picture of traffic conditions in the metro area and on rural freeways. Also, the project validated the accuracy and reliability of traffic non-infrastructure-based data collection on a major state arterial and rural interstate construction work zone.

### Arterial Travel Time Monitoring System Using Bluetooth Technology (completed in March, 2011)

This project demonstrated the use of Bluetooth technology for cost-effective real-time and accurate travel time information along Minnesota's arterials, and also demonstrated how travel time information might be used to measure performance of arterial traffic management and operations.

### Deployment of Arterial Travel Time Information Demonstration Project (2009-2011)

The Arterial Travel Time Information Demonstration project helped determine how arterial travel time information should be displayed on dynamic message signs and websites (such as 511) through input from focus groups and customer surveys.

### ICM Integrated Corridor Management (2006-2013)

Minnesota was one of eight locations selected by the USDOT to pilot the development of integrated corridor management (ICM) strategies. The Minnesota ICM Corridor was located along the I-394 Corridor on the west side of the Twin Cities. The focus of ICM was to develop strategies that, when implemented, help reduce congestion throughout the freeways, arterials, and transit networks.

### ITS During Major Urban Reconstruction (2007-2010)

The ITS During Major Urban Reconstruction project strived to give the Crosstown Commons project and other major urban projects safety improvements for motorists and construction personnel as well as greater use of alternative routes, more real-time information and reduced speeds during key phases.

## Travel Demand Management (TDM)

Travel demand management (TDM) consists of ongoing programmatic strategies to reduce drive-alone vehicle trips and vehicle miles traveled during peak congestion times, special events, and for construction project areas. TDM strategies provide incentives for people to more effectively use existing transportation resources and infrastructure. The desired outcome of these strategies is to promote mobility and reduce congestion by reducing trips and miles of travel by single-occupant vehicles (SOV). TDM includes the most effective strategies to facilitate the movement of people by modes such as carpooling, vanpooling, transit, bicycling, and walking. TDM also supports flexible employment arrangements that do not require peak-period travel (flexible schedules) or would allow employees to avoid the commute altogether by working from home (telecommuting). Reducing SOV trips and miles traveled, particularly in the morning and afternoon peak travel periods, should also produce health and environmental benefits (lower levels of air pollution and reduced energy use). Linking TDM with supportive land use patterns and development decisions can also reduce SOV trips.

The region's objectives for travel demand management are to:

- Increase the use of alternative transportation modes such as walking, bicycling, public transit, carpooling, vanpooling, and flexible work arrangements, such as telecommuting, to reduce vehicle miles traveled
- Ease congestion during the peak periods, special events, and construction
- Reduce air pollution and energy consumption related to transportation
- Make more efficient use of transportation infrastructure and services
- Reduce the necessity of car ownership when other travel choices exist
- Promote transportation-efficient land development
- Provide "reverse commuting" assistance for urban commuters to employment locations not served by transit

The Council will work to implement these TDM objectives where appropriate through a combination of efforts with Metro Transit and transportation management organizations (TMOs). TMOs are public or private partnerships in highly-congested locations comprising employers, building owners, businesses, and local government interests that are established to mitigate peak traffic congestion and promote travel by modes other than single-occupant vehicles.

The Council will provide TDM technical assistance and financial incentives to TMOs, especially those located in areas with high levels of congestion. The Council and its TDM partners will also provide assistance to local units of government to implement TDM strategies and to employers and property owners/managers wishing to develop their own TDM plans.

Where appropriate, the Council will work with local governments to explore how modifying parking policies could encourage park-and-ride usage, vanpooling, and carpooling. The Council will also support its partners in local government to encourage parking spaces to be unbundled from building leases in order to make the cost of providing space for parking more transparent in congested areas.

A recently completed TDM study (discussed later in this chapter) provided the following key recommendation that will strengthen the link between TDM and congestion management: focus local and regional TDM efforts on employment centers and corridors with significant investments in multimodal options.

These significant multimodal investments include expanded transit service, MnPASS lanes, bus-only shoulders, and biking/walking facilities. These investments will typically be applied in the most congested corridors via recommendations from the *Metropolitan Highway Strategic Investment Study*, MnPASS-2, and CMSP.

## Transit System

The TDM and highway investment strategies to manage congestion are also supported by investments in the transit system. A better-managed overall transportation system will facilitate the region's objectives of increasing the mode share of travel using modes other than single-occupant vehicles. Expanding the transit system and accommodating more non-motorized travel will give area travelers more mobility options. This Transportation Policy Plan includes an expansion of the transit system that considers investments in both the bus system and the transitway system. The bus system expansion is guided by several planning elements, including the Regional Service Improvement Plan and Park-and-Ride Plan, and identifies opportunities for local, high-frequency, and express service expansion. Prioritization for these investments includes the consideration of the location and extent of congestion and the availability of transit advantages to bypass congestion.

The transitway system expansion includes plans for expanded light rail, commuter rail, and bus rapid transit in a variety of forms. Prioritization for transitway investments includes the consideration of an investment's ability to shift riders from driving to transit and provide reliable trips. Other factors included in prioritization will indirectly consider the impacts on congestion, and corridor-specific planning may still address congestion as a local concern.

Transitway planning will also be strongly coordinated with land use planning through the Council's local comprehensive plan review process. The Council will require or support more intense land uses near transit investments to increase the potential for transit use in growing areas of the region.

### Land Use Policy

Connecting land use decisions to transportation investments will support the objective of increasing the use of transit, walking, and biking, which helps to minimize the growth in congestion. Land use with sufficient activity and density, including walkable streets and a local transportation network, can best support transit options. A well-connected local and collector roadway network will also support regional highways by keeping local travel off of highways and making walking and bicycling more attractive options for local travel. This supportive road network, in addition to investments in alternatives to the automobile, will support more travel-efficient land development that allows people to live and work within a reasonable commute time and to avoid congestion.

Land use strategies derived from *Thrive MSP 2040* that serve to bolster transit ridership and thereby contribute to congestion management include:

- Coordinate transportation investments and land development to create an environment supportive of travel by modes other than the automobile including travel by transit, walking, and bicycling
- Coordinate transportation investments and land development along major transportation corridors to intensify job concentrations, increase transportation links between job concentrations and medium-to-high density residential developments, and improve job-to-housing connections
- Transitways and the arterial bus system should be catalysts for the development and growth of major employment centers and residential nodes to form an interconnected network of higher density nodes along transit corridors
- Intensify population density in nodes along transportation corridors, especially along existing and potential transit corridors
- Intensify employment clusters with transit and pedestrian infrastructure

## Step 7: Implement Selected Strategies/Manage System

The CMP is guided by the technical analysis and direction provided by six major planning efforts conducted by the Council and MnDOT in 2009, 2010, and 2012. The findings and recommendations are the basis for the investment priorities contained in the fiscally constrained 2040 highway plan. They also are the basis for the development of a long-range list of potential investments from which additional projects could be drawn should funds materialize beyond the highway revenues projected in this plan. These six planning efforts, described below, provide the underlying problem identification, solution development, and analysis to support the strategies being implemented through the *2040 TPP* and the CMP.

### *Metropolitan Highway System Investment Study* (MHSIS) (2010)

This study had a planning horizon beyond the fiscally constrained 2030 TPP and carried out a comprehensive evaluation of Active Traffic Management (ATM) strategies, managed lanes, and strategic capacity enhancements to address congestion problems on principal arterials throughout the Metropolitan Highway System. It also included a specific project evaluation and prioritization process as the basis for the fiscally constrained plan discussed in Chapters 4 and 5 of this plan.

The study used five performance goals and associated performance measures for evaluating managed lanes and targeted capacity expansion projects:

**Table 12-18:** MHSIS Performance Goals

| Goal | Performance Measure |
|---|---|
| Increase people-moving capacity | Person throughput |
| Provide alternatives to traveling in congested conditions | Travel time savings |
| Implement strategic and affordable investments to manage existing facilities | Cost effectiveness |
| Increase trip reliability for corridor users | Reductions in trip delays in managed lanes |
| Encourage increased transit use | Transit suitability assessment |

This evaluation scheme was discussed with various stakeholders at 10 workshops throughout the region. The purpose of this exercise was to develop a better understanding of the relative ranking of these five performance goals and their performance measures.

These performance measures will be used along with those defined earlier in this section, through the CMP, to evaluate the effectiveness of implemented investments and to reassess priorities, if necessary.

## Major Corridor Reassessments

MnDOT has also conducted, in conjunction with the MHSIS, the reassessment of 12 major capacity projects in the Metropolitan Highway System which had been included in the *2004 Transportation Policy Plan*, but excluded from the 2009 version because they exceeded the financial constraints of the plan.

Based on this analysis, MnDOT is recommending that alternative options for managing congestion in these corridors be considered. Common themes of this reassessment include proposing lower-cost options that can accomplish a large portion of the benefits expected from the larger projects, the use of managed lanes options and strategic capacity investments and the coordination of different types of improvements (preservation, bridge replacement, and safety, ATM) to maximize synergy.

Specific recommendations of this reassessment are further discussed in Chapter 5 of this document.

## MnPASS System Study 2 (2010)

The purpose of this study was to develop a prioritized list of potential candidate corridors for additional MnPASS lanes that can be implemented in the short term (2-10 years). A total of 13 candidate corridors were considered and submitted to an initial screening. This step was followed by traffic and revenue analysis as well as conceptual engineering analysis and cost estimation of the most promising projects.

A subsequent detailed performance evaluation was performed to establish implementation priorities. Measures included travel time reliability, person trip throughput, travel time reduction, change in congested vehicle miles travelled, and transit suitability. This *MnPASS System Study 2* performance evaluation scheme was consistent with the methodology used in the MHSIS.

Preliminary results from the MnPASS 2 study were used to establish MnPASS lane priorities in the Fiscally Constrained 2030 Plan in Chapter 6: Highways. These results are carried forward into the *2040 Transportation Policy Plan* as well (see Figure 12-9). Managed lane projects implemented in the short term will be re-evaluated through the CMP using the same performance measures described above to determine longer term MnPASS lane investment priorities.

## Congestion Management and Safety Plan (CMSP)

The CMSP defines a process and criteria to identify and prioritize lower-cost/high-benefit highway construction projects that provide mobility, safety and efficiency benefits. Phase III of the CMSP was undertaken to identify a list of lower-cost/high-benefit projects that seek to maximize mobility and reduce crash risk at key congestion and safety problem locations. The most recent phase of the plan (phase III) of the plan was completed in 2013. It also defines a project-specific framework for before and after studies to help evaluate those projects once implemented to better understand the potential effectiveness of different tools in mitigating congestion and safety projects. Typical lower-cost/high-benefit projects remove bottlenecks and safety hazards with flexible design solutions that can be accommodated within the existing right-of-way.

Initially, the CMSP identified problem locations on the existing Metropolitan Highway System both for a.m. peak hours and p.m. peak hours. Typical problem locations include areas where existing freeway traffic volumes make it difficult to accommodate new merging traffic from other roads, and where mainline freeway traffic back-ups occur because of not enough capacity on the exit ramps. Other problem areas include excessive freeway mainline weaving and freeway ramp-to-ramp weaving as well as locations where a mainline lane is dropped. As traffic volumes increase over time, congestion and safety problems are magnified at those locations and their impacts propagate to increasingly longer segments of the system.

The evaluation measures for these lower-cost/high-benefit projects include increased traffic flow rate (i.e. vehicles per day and per peak period), peak period miles of congestion, peak period travel speed, crash reduction by severity and benefit/cost ratio. Figure 12-8 illustrates potential project locations identified through the CMSP process.

## Travel Demand Management Evaluation and Implementation Study (2010)

The purpose of this study was to outline a clear process for selecting, funding, and implementing travel demand management (TDM) strategies, and also structuring and evaluating the Twin Cities TDM program. The local TDM partners were engaged during the study through a formal advisory committee, including state, regional, and local organizations.

The TDM study builds upon a very successful venture in promoting and implementing TDM strategies in this region over more than three decades. It includes eight broad TDM goals and a detailed list of recommended strategies for each of those goals.

Key TDM goals from the study include:

- Allocating future Congestion Mitigation and Air Quality (CMAQ) funding for TDM based on monitored performance and sound estimates of impacts
- Developing additional funding sources to expand the regional TDM program
- Evaluating regional program performance over time by annually tracking vehicle miles reduced due to TDM efforts
- Focusing local and regional TDM efforts on employment centers and corridors with significant investments in multimodal options

## A-Minor Arterial System Evaluation Study (2012)

The purpose of the *A-Minor Arterial System Evaluation Study* was to evaluate if the Twin Cities metropolitan area's A-minor arterial system has and continues to successfully supplement the principal arterial system. In doing so, the study considered if the original purpose of the A-minor arterial system aligned with regional policy in 2012. It also examined the system's funding – federal, state, and local – to identify the role of federal funding, including those funds awarded through the Regional Solicitation process.

The study's findings and recommendations showed that the region's A-minor arterial system has successfully supplemented the principal arterial system and this original purpose continues to align with current regional policy. In addition, the study recognized the A-minor arterial system supports important access to regional job and activity centers and freight terminals for freight, transit, and people walking and on bicycles. Finally, the study found that federal funding, including monies awarded through the Regional Solicitation, plays a small but important part in developing and enhancing the system. The study's findings and recommendations identified the changes needed to allow the A-minor arterial system to continue to fulfill its important roles in the highway system.

## Specific *2040 Transportation Policy Plan* Strategies

Consistent with the structure set in other section of this Transportation Policy Plan, strategies are presented in their goal areas:

### A. Transportation System Stewardship

Strategy A1. Regional transportation partners will place the highest priority for transportation investments on strategically preserving, maintaining, and operating the transportation system.

Strategy A2. Regional transportation partners should regularly review planned preservation and maintenance projects to identify cost-effective opportunities to incorporate improvements for safety, lower-cost congestion management and mitigation, transit, bicycle, and pedestrian facilities.

Strategy A3. The Council and regional transit providers will use regional transit design guidelines and performance standards, as appropriate based on Transit Market Areas, to manage the transit network, to respond to demand, and balance performance and geographic coverage.

### C. Access to Destinations

Strategy C3. The Council, working with MnDOT, will continue to maintain a Congestion Management Process for the region's principal arterials to meet federal requirements. The Congestion Management Process will incorporate and coordinate the various activities of MnDOT, transit providers, counties, cities and transportation management organizations to increase the multimodal efficiency and people-moving capacity of the National Highway System.

Strategy C4. Regional transportation partners will promote multimodal travel options and alternatives to single occupant vehicle travel and highway congestion through a variety of travel demand management initiatives, with a focus on major job, activity, and industrial and manufacturing concentrations on congested highway corridors and corridors served by regional transit service.

Strategy C5. The Council will work with MnDOT and local governments to implement a system of MnPASS lanes and transit advantages that support fast, reliable alternatives to single-occupancy vehicle travel in congested highway corridors.

Strategy C7. Regional transportation partners will manage and optimize the performance of the principal arterial system as measured by person throughput.

Strategy C8. Regional transportation partners will prioritize all regional highway capital investments based on a project's expected contributions to achieving the outcomes, goals, and objectives identified in *Thrive MSP 2040* and the Transportation Policy Plan.

Strategy C9. The Council will support investments in A-minor arterials that build, manage, or improve the system's ability to supplement the capacity of the principal arterial system and support access to the region's job, activity, and industrial and manufacturing concentrations.

Strategy C10. Regional transportation partners will manage access to principal and A-minor arterials to preserve and enhance their safety and capacity. The Council will work with MnDOT to review interchange requests for the principal arterial system.

Strategy C11. The Council and regional transit providers will expand and modernize transit service, facilities, systems, and technology, to meet growing demand, improve the customer experience, improve access to destinations, and maximize the efficiency of investments.

Strategy C12. Regional transportation partners will invest in an expanded network of transitways that includes but not limited to bus rapid transit, light rail, and commuter rail. Transitway investments will be prioritized based on factors that measure a project's expected contributions to achieving the outcomes, goals, and objectives identified in *Thrive MSP 2040* and the Transportation Policy Plan.

Strategy C19. The Council and MnDOT should work together with cities and counties to provide efficient connections from major freight terminals and facilities to the regional highway system, including the federally designated Primary Freight Network.

## D. Competitive Economy

Strategy D1. The Council and its transportation partners will identify and pursue the level of increased funding needed to create a multimodal transportation system that is safe, well maintained, offers modal choices, manages and eases congestion, provides reliable access to jobs and opportunities, facilitates the shipping of freight, connects and enhances communities, and shares benefits and impacts equitably among all communities and users.

Strategy D2. The Council will coordinate with other agencies planning and pursuing transportation investments that strengthen connections to other regions in Minnesota and the Upper Midwest, the nation, and world including intercity bus and passenger rail, highway corridors, air service, and freight infrastructure.

Strategy D4. The Council, MnDOT, and local governments will invest in a transportation system that provides travel conditions that compete well with peer metropolitan areas.

Strategy D5. The Council and MnDOT will work with transportation partners to identify the impacts of highway congestion on freight and identify cost-effective mitigation.

## F. Leveraging Transportation Investments to Guide Land Use

Strategy F2. Local governments should plan for increased density and a diversification of uses in job concentrations, nodes along corridors, and local centers to maximize the effectiveness of the transportation system.

Strategy F4. Local governments will identify opportunities for and adopt guiding land use policies that support future growth around transit stations and near high-frequency transit service. The Council will work with local governments in this effort by providing technical assistance and coordinating the implementation of transit-oriented development. The Council will also prioritize

investments in transit expansion in areas where infrastructure and development patterns to support a successful transit system are either in place or committed to in the planning or development process.

Strategy F5. Local governments should lead planning efforts for land use in transit-oriented station areas, small-areas, or corridors, with the support of the Council and other stakeholders.

## Step 8: Monitor Strategy Effectiveness

The CMP must include clear steps for ongoing monitoring and evaluating of the performance of the multimodal transportation system in order to quantify congestion levels on the Metropolitan Highway System, identify and evaluate alternative strategies, and assess the effectiveness of implemented improvements. Those efforts are further discussed in this section.

The ongoing data collection and system performance evaluation will primarily be the responsibility of MnDOT for the highway system with important contributions from the Council for transit and TDM-related data.

MnDOT has been formally collecting and processing congestion data since 1993. The data is collected through surveillance detectors in roadways, cameras, and field observations. About 90% of the urban freeway system is equipped with electronic surveillance systems. MnDOT's RTMC collects and analyzes the data from about 3,000 detectors embedded in mainline lanes and an additional 2,200 detectors on freeway ramps. The data collected by MnDOT and law enforcement agencies permit the estimation of daily and peak period traffic volumes, vehicle miles traveled, speeds, lane density, levels of service, delays, travel times, and vehicle occupancy, as well as safety data such as number of fatalities and type A injuries, crash rates and severity rates.

On an annual basis, MnDOT publishes a Metropolitan Freeway System Congestion Report that evaluates the 758 directional miles of the Twin Cities urban freeway system to develop the a.m. and p.m. percentages of directional miles of congestion (i.e. speeds below 45 mph). Speed data are based on the median value of data collected at detectors locations, at 5 minutes intervals for the 5:00 a.m. to 10:00 a.m. and the 2:00 p.m. to 7:00 p.m. time periods. Median values, rather than averages, are used to mitigate the effects of temporary lane closures, significant traffic incidents, and other one-time traffic events not related to daily commuting traffic patterns.

Expanded efforts in the area of traffic management with the increased emphasis on ATM strategies will require MnDOT management to ensure that adequate staff and resources for the operation of the RTMC are available. There may also be additional resource needs for MnDOT maintenance.

MnDOT monitoring and reporting will need to be expanded to include their trunk highways that are on the A-minor arterial system, work that is currently underway. Data collection will also have to be coordinated with the counties and cities of the region that have A-minor arterials under their jurisdiction.

Metro Transit, the Metropolitan Transportation Services (MTS) division of the Council, and other transit providers collect transit data on all bus and rail routes in the region. This data set includes ridership numbers that can be aggregated at the corridor level to identify reductions in automobile traffic, transit levels of service (vehicle miles and vehicle hours), operating cost, fare revenues, and subsidy levels. This transit data, updated annually by the MTS, is used to produce a Transit System Evaluation every two years.

Metro Transit also collects TDM data, including records of registration of carpools and vanpools as well as participation in special programs. These include events such as the Commuter Challenge, in which during a three-month period in 2008 more than 15,000 commuters pledged to try transit, bike, walk, or rideshare; and the 2009 Bike2Benefits program, in which 2,900 members logged an estimated 375,000 bike and bike-plus-transit miles.

Metro Transit also manages data for the four Transportation Management Organizations (TMOs), updating the RidePro database which includes, among other data, information on the Guaranteed Ride Home program, carpool and vanpool parking registration, and employer outreach contacts.

## Additional Ongoing Work Plan Elements for CMP

**Monitor and integrate data and measures on A-minor arterial system, in the jurisdiction of both MnDOT and other agencies.** Methods and data for measuring and reporting congestion on the A-minor arterial system used by MnDOT, the counties and cities need to be reconciled. To integrate into a complete picture of congestion in the region, the measures need to be aggregated in a consistent manner. The Council will need to work with the relevant agencies to gather this information and combine into a coherent database.

**Develop goals for performance measures.** On the final adoption of performance measures by the USDOT, the Council will need to work with MnDOT in the development of the state targets for the system performance measures, and then adopt targets for the region. At that time it would also be appropriate to review the congestion related performance measures included in the *2040 Transportation Policy Plan* and CMP to determine targets, trends or benchmarks for those measures.

**Develop data distribution methods that are user friendly and timely.** To fully integrate the CMP into the decision making process to all involved agencies, a more accessible and user-friendly method of accessing the information on both historic and current congestion needs to be developed and made available.

**Assess corridors using performance measures included in this CMP for inclusion in next CMP.** Past work by the Council and MnDOT (PA Study, MHSIS, CIMS, and CMSP) provided information on congestion and needs on a corridor level. The principal arterial corridors and the related A-minor arterial system need to be re-evaluated based on performance measures in the *2040 Transportation Policy Plan* and CMP.

# Environmental Justice and Civil Rights

## Introduction

Federal guidance for evaluating impacts is derived from Title VI of the Civil Rights Act of 1964 as well as Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-income Populations. Under the executive order, transportation plans and programs (1) must provide a fully inclusive public outreach program; (2) should not disproportionately impact minority and low-income communities, and (3) must assure the receipt of benefits by minority and low-income populations. The TPP addresses these three principles and they were considered throughout the decision-making process. These principles must also be considered in the project design and implementation phases for future specific projects.

An important consideration for the *2040 Transportation Policy Plan* is its impact on all populations in the Minneapolis-Saint Paul region, particularly those who have been historically underrepresented in regional planning efforts, including communities of color, low-income households, people with disabilities, and people with limited English proficiency. Past plans were required to adhere to federal requirements for environmental justice; this plan further responds to additional aspirations for equity set forth in *Thrive MSP 2040*. The plan's complete responses to both federal requirements and regional aspirations can be found in Chapter 10: Equity & Environmental Justice.

After analyzing the distribution of programs, strategies, and projects identified in the *2040 Transportation Policy Plan*, and the location of historically underrepresented populations in the region, in can be concluded that any benefits or adverse effects associated with implementing the plan are not distributed to these populations in a manner significantly different than to the region's population as a whole.

During the project selection and project development processes, individual programs and projects will be further evaluated for potential disproportionate and adverse effects on these population groups.

Title VI of the Civil Rights Act of 1964 provides that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Federal guidance on Title VI implementation requires that MPOs submit a Title VI report that includes:

- A demographic profile of the metropolitan area that includes identification of the locations of minority populations in the aggregate;
- A description of the procedures by which the mobility needs of minority populations are identified and considered within the planning process;
- Demographic maps that overlay the percent minority and non-minority populations as identified by Census or ACS data, at Census tract or block group level, and charts that

analyze the impacts of the distribution of state and federal funds in the aggregate for public transportation purposes, including federal funds managed by the MPO as a designated recipient;

- An analysis of impacts that identifies any disparate impacts on the basis of race, color, or national origin, and, if so, determines whether there is a substantial legitimate justification for the policy that resulted in the disparate impacts, and if there are alternatives that could be employed that would have a less discriminatory impact.

These items are included in the Council's Title VI Compliance and Implementation Plan, adopted on April 30, 2014.

# Air Quality

## Clean Air Act Conformity Determination

The Minneapolis-Saint Paul region is within an EPA-designated limited maintenance area for carbon monoxide. A map of this area, which for air quality conformity analysis purposes includes the seven-county Metropolitan Council jurisdiction plus Wright County and the City of New Prague, is included in Appendix E. The term "maintenance" reflects the fact that regional carbon dioxide emissions were unacceptably high in the 1970s when the National Ambient Air Quality Standards (NAAQS) were introduced, but were subsequently brought under control. A second 10-year maintenance plan was approved by EPA on November 8, 2010, as a "limited maintenance plan." Every Transportation Policy Plan (TPP) or Transportation Improvement Program (TIP) approved by the Council must be analyzed using specific criteria and procedures defined in the Conformity Rule to verify that it does not result in emissions exceeding this current regional carbon dioxide budget. A conforming TIP and TPP must be in place in order for any federally funded transportation program or project phase to receive FHWA or FTA approval.

The analysis described in the appendix has resulted in a Conformity Determination that the projects included in the *2040 TPP* meet all relevant regional emissions analysis and budget tests as described herein. The *2040 TPP* conforms to the relevant sections of the Federal Conformity Rule and to the applicable sections of Minnesota State Implementation Plan for air quality.

Specific federal requirements of a conformity determination can be found in Appendix E.

## Public Involvement & Interagency Consultation Process

The Council remains committed to a proactive public involvement process used in the development and adoption of the plan as required by the Council's Public Participation Plan for Transportation Planning.

An interagency consultation process was used to develop the Transportation Policy Plan. Consultation continues throughout the public comment period to respond to comments and concerns raised by the public and agencies prior to final adoption by the Council. The Council, MPCA, and MnDOT confer on the application of the latest air quality emission models, the review and selection of projects exempted from a conformity air quality analysis, and regionally significant projects that must be included in the conformity analysis of the plan. An interagency conformity work group provides a forum for interagency consultation on technical conformity issues, and has met in person and electronically over the course of the development of the *2040 TPP.*

## Project Lists & Assumptions

As required by the Conformity Rule, projects listed in the plan were reviewed and categorized through the interagency process to identify projects exempt from a regional air quality analysis as well as regionally significant projects. Regionally significant projects were identified according to the definition in the Conformity Rule: "Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most

terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel." Junction improvements and upgraded segments on non-principal arterials less than one mile in length are not considered to be regionally significant, although they are otherwise not exempt. The exempt air quality classification codes used in the "AQ" column of project tables of the TIP are listed in Appendix E along with additional requirements for exemption. A complete list of regionally significant projects included in the 2040 TPP, including projects in the 2015-18 TIP and regionally significant local projects can be found in Appendix E.

## Emissions Test

In 2010, the EPA approved a Limited Maintenance Plan for the maintenance area. A limited maintenance plan is available to former non-attainment areas which demonstrate that monitored concentrations of carbon dioxide remain below 85% of the eight-hour NAAQS for eight consecutive quarters. MPCA carbon dioxide monitoring data shows that eight-hour concentrations have been below 70% of the NAAQS since 1998 and below 30% of the NAAQS since 2004.

Under a limited maintenance plan, the EPA has determined that there is no requirement to project emissions over the maintenance period and that "an emissions budget may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the carbon dioxide NAAQS would result." No regional modeling analysis is required; however, federally funded projects are still subject to "hot spot" analysis requirements.

The limited maintenance plan adopted in 2010 determines that the level of carbon dioxide emissions and resulting ambient concentrations continue to demonstrate attainment of the carbon dioxide NAAQS. The following additional programs will also have a beneficial impact on carbon dioxide emissions and ambient concentrations: ongoing implementation of an oxygenated gasoline program as reflected in the modeling assumptions used in the State Implementation Plan; a regional commitment to continue capital investments to maintain and improve the operational efficiencies of highway and transit systems; adoption of *Thrive MSP 2040,* which supports land use patterns that efficiently connect housing, jobs, retail centers, and transit-oriented development along transit corridors; and the continued involvement of local government units in the regional 3C transportation planning process, which allows the region to address local congestion, effectively manage available capacities in the transportation system, and promote transit supportive land uses as part of a coordinated regional growth management strategy. For all of these reasons, the Twin Cities carbon dioxide maintenance areas will continue to attain the carbon dioxide standard for the next 10 years.

## Transportation Control Measures

Pursuant to the Conformity Rule, the Council certifies that the 2040 TPP conforms to the State Improvement Plan and does not conflict with its implementation. All Transportation System Management (TSM) strategies which were the adopted Transportation Control Measures (TCM) for the region have been implemented or are ongoing and funded. There are no TSM projects remaining to be completed. There are no fully adopted regulatory new TCMs nor fully funded non-regulatory TCMs that will be implemented during the programming period of the TIP.

There are no prior TCMs that were adopted since November 15, 1990, nor any prior TCMs that have been amended since that date. Details on the status of adopted Transportation Control Measures can be found in Appendix D.

## Compliance with National Ambient Air Quality Standards

The Environmental Protection Agency has established National Ambient Air Quality Standards for six pollutants known to cause harm to human health and the environment, known as criteria pollutants. Criteria pollutants are particulate matter, lead, ozone, nitrogen dioxide, sulfur dioxide, and carbon monoxide. The pollutants, along with other pollutants known as air toxics, are monitored by the Minnesota Pollution Control Agency. The following sections list the region's compliance status for regulated pollutants in 2013. The region is currently in compliance with all national ambient air quality standards.

### Particulate Matter

Highest measured annual average fine particulate matter concentrations were 9.8 µg/m$^3$, 82% of the federal standard of 12 µg/m$^3$. Daily concentrations were 24 µg/m$^3$, or 69% of the federal standard of 35 µg/m$^3$. Daily coarse particulate matter concentrations are 58 µg/m$^3$, or 39% of the federal standard if 150 µg/m$^3$. The region meets federal standards for particulate matter. However, the Environmental Protection Agency periodically revises its standards and if they are tightened, the region may be at risk of exceeding standards.

### Lead

Highest measured lead concentrations in the region were 0.111 µg/m$^3$, or 74% of the federal standard of 0.15 µg/m$^3$. This is due to non-transportation sources at one location; elsewhere concentrations are much lower.

### Ozone

Highest measured 8-hour ground level ozone concentrations were 67 ppb, or 89% of the federal standard of 75 ppb. The region meets federal standards for ozone. However, the Environmental Protection Agency periodically revises its standards and if they are tightened, the region may be at risk of exceeding standards.

### Nitrogen Oxides

Highest measured annual nitrogen dioxide concentrations were 8 ppb, or 15% of the federal standard of 53 ppb. One-hour concentrations were 44 ppb, or 44% of the federal standard of 100 ppb. The region meets federal standards for nitrogen oxides. However, the Environmental Protection Agency has released a new standard for near-road concentrations. The Minnesota Pollution Control Agency is currently monitoring but data on compliance with federal standards is not yet available.

### Sulfur Dioxide

Highest measured one-hour sulfur dioxide concentrations were 14 ppb, or 19% of the federal standard of 75 ppb. The region meets federal standards for sulfur dioxide.

### Carbon Monoxide

Highest measured one-hour carbon monoxide concentrations were 4.6 ppm, or 13% of the federal standard of 35 ppm. Eight-hour concentrations were 2.8 ppm, or 31% of the federal standard of 9 ppb. The region meets federal standards for carbon monoxide.

# Federal Planning Factors

23 USC 134(h) and 49 USC 5303(h) require Metropolitan Planning Organizations (MPOs) to consider and implement projects, strategies, and services that address eight planning factors through their metropolitan planning process. Each of these planning factors is represented in *Thrive MSP 2040*—the Council's overall regional development guide—and is addressed in the goals, objectives, and strategies of the *2040 Transportation Policy Plan*.

## 1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

### Goals and Objectives

Competitive Economy – "The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state" along with its associated objectives.

### Strategies

Competitive Economy D1, D2, D3, D4, D5, D6, D7.

## 2. Increase the safety of the transportation system for motorized and non-motorized users.

### Goals and Objectives

Safety and Security – "The regional transportation system is safe and secure for all users" along with its associated objectives: "Reduce crashes and improve safety and security for all modes of passenger travel and freight transport" and "Reduce the transportation system's vulnerability to natural and man-made incidents and threats."

### Strategies

Safety and Security B1, B3, B4, B5, B6, B7.

## 3. Increase the security of the transportation system for motorized and non-motorized modes.

### Goals and Objectives

Safety and Security – "The regional transportation system is safe and secure for all users" along with its associated objectives: "Reduce crashes and improve safety and security for all modes of passenger travel and freight transport" and "Reduce the transportation system's vulnerability to natural and man-made incidents and threats."

### Strategies

Safety and Security B2, B3, B5, B7.

## 4. Increase accessibility and mobility of people and freight.

### Goals and Objectives

Access to destinations – "People and businesses prosper by using a reliable, affordable, and efficient multimodal transportation system that connects them to destinations throughout the region and beyond" along with its associated objectives:

A: "Increase the availability of multimodal travel options, especially in congested highway corridors."

B: Increase travel time reliability and predictability for travel on highway and transit systems."

C: "Ensure access to freight terminals such as river ports, airports, and intermodal rail yards."

D: “Increase transit ridership and the share of trips taken using transit, bicycling and walking.”

E: “Improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically under-represented populations.”

Leveraging Transportation Investments to Guide Land Use – “The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability” along with its associated objectives:

A: “Focus regional growth in areas that support the full range of multimodal travel.”

B: “Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement.”

C: “Encourage local land use design that integrates highways, streets, transit, walking, and bicycling.”

Healthy Environment – “The regional transportation system advances equity and contributes to communities’ livability and sustainability while protecting the natural, cultural, and developed environments” along with its associated objective C: “Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles.”

Competitive Economy – “The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state” along with its associated objective C: “Support the region’s economic competitiveness through the efficient movement of freight.”

**Strategies**

Transportation System Stewardship A2, A3; Access to Destinations C1-C20; Competitive Economy D1,D2, D3, D4, D5; Healthy Environment E3; and Leveraging Transportation to Influence Land Use F2, F3, F6, F7,F8, F9.

## 5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.

**Goals and Objectives**

Healthy Environment – “The regional transportation system advances equity and contributes to communities’ livability and sustainability while protecting the natural, cultural, and developed environments” along with its associated objectives:

“Reduce transportation-related air emissions.”

“Reduce impacts of transportation construction, operations, and use on the natural, cultural, and developed environments.”

“Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles.”

“Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations.”

Leveraging Transportation Investments to Guide Land Use – “The region leverages transportation investments to guide land use

and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability" along with its associated objectives:

"Focus regional growth in areas that support the full range of multimodal travel."

"Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement."

"Encourage local land use design that integrates highways, streets, transit, walking, and bicycling."

**Strategies**

Healthy Environment E1, E2, E3, E5, E6, E7; Leveraging Transportation to Influence Land Use F1, F2, F3, F4, F5, F6, F7, F8, F9.

## 6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

**Goals and Objectives**

Access to Destinations – "People and businesses prosper by using a reliable, affordable, and efficient multimodal transportation system that connects them to destinations throughout the region and beyond" along with its associated objectives:

A: "Increase the availability of multimodal travel options, especially in congested highway corridors."

C: "Ensure access to freight terminals such as river ports, airports, and intermodal rail yards."

E: "Improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically under-represented populations."

Leveraging Transportation Investments to Guide Land Use – "The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability" along with its associated objectives:

A: "Focus regional growth in areas that support the full range of multimodal travel."

B: "Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement."

C: "Encourage local land use design that integrates highways, streets, transit, walking, and bicycling."

Healthy Environment – "The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments" along with its associated objectives:

C: "Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles."

D: "Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations."

Competitive Economy – "The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state" along with its associated objectives:

A: "Improve multimodal access to regional job concentrations identified in *Thrive MSP 2040*."

B: “Invest in a multimodal transportation system to attract and retain businesses and residents.”

C: “Support the region’s economic competitiveness through the efficient movement of freight.”

**Strategies**

Access to Destinations C1, C2, C3, C4, C5, C11, C12, C13, C14, C15, C16, C17, C20; Competitive Economy D2, D3; Healthy Environment E3.

## 7. Promote efficient system management and operation.

**Goals and Objectives**

Transportation System Stewardship – “Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets” along with its associated objective B: “Operate the regional transportation system to efficiently and cost-effectively move people and freight.”

**Strategies**

Transportation System Stewardship A1, A2, A3; Access to Destinations C7, C8, C9, C10, C 11, C12, C15, C17, C19.

## 8. Emphasize the preservation of the existing transportation system.

**Goals and Objectives**

Transportation System Stewardship – “Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets” along with its associated objective: “Efficiently preserve and maintain the regional transportation system in a state of good repair.”

**Strategies**

Transportation System Stewardship A1, A2, A3.

# Other Federal Requirements

## Coordinated Action Plan for Public Transit & Human Services

The current plan was adopted February 12, 2013. This plan is required for project selection for some MAP-21 formula transit grant programs. It documents existing resources; identifies gaps in transportation services; and establishes goals, strategies, and criteria for delivering efficient, coordinated services to elderly, underemployed, or otherwise financially disadvantages persons and persons with disabilities. This plan is updated every four years.

## Environmental Streamlining – Planning & Project Development Linkage

Early integration of project planning and the environmental review and approval process improves the likelihood that projects and services can be implemented in a timely and environmentally sensitive manner. MAP-21 stresses the need for integrating the planning and environmental process, and promotes a streamlined process for reviews and permitting.

*Thrive MSP 2040* and other policy documents of the Council strongly support protection and enhancement of the environment. In developing the *2040 Transportation Policy Plan* and other system plans, the Council closely followed the direction established in *Thrive MSP 2040*. The Council, together with the DNR, has developed the Natural Resources Inventory and Digital Atlas that is made available to local governments and other stakeholders involved in planning and implementing transportation investments. The Natural Resources Inventory provides comprehensive information about environmental resources throughout the seven-county metropolitan area.

The integration of the planning and development process will vary for projects included in the *2040 Transportation Policy Plan* and for those already in the design phase. For many projects, the planning and environmental processes have progressed to such a stage that little will change based on this update.

Almost all highway projects and most transitway projects are on existing roadway or railroad rights-of-way. Environmental approvals will be necessary but are significantly different than if the projects were proposed on new rights-of-way.

Many of the corridors included in this plan are already undergoing detailed analysis and environmental review, and in some corridors, environmental documentation has already been completed. This plan has and will continue to help focus the analysis and shorten the process by defining the number of corridors and the types of transit technologies to be studied.

## Environmental Mitigation

*Thrive MSP 2040* emphasizes the protection and enhancement of environmental quality through its outcomes of stewardship, livability, and sustainability. The Council supports work toward this end through the application of the Natural Resource Inventory, which provides comprehensive information about environmental resources throughout the seven-county metropolitan area.

The Transportation Policy Plan emphasizes environmental mitigation and enhancement through its Healthy Environment goal. In particular, strategy E4, "Regional transportation partners will protect, enhance and mitigate impacts on natural resources when planning, constructing, and operating transportation systems. This will include management of air and water quality and identification of priority natural resources through the Council/DNR Natural Resources Inventory," commits transportation partners to protecting and enhancing the natural environment. Strategy E5, "Transportation partners will protect, enhance and mitigate impacts on the cultural and built environments when planning, constructing, and operating transportation systems," commits to protecting and enhancing the cultural and built environment. Other strategies emphasize the importance of reductions in transportation-related air emissions, and in the central role of environmental justice in transportation planning.

Implementation of all projects in this plan will be accompanied by appropriate environmental review and mitigation.

## Consultation and Cooperation

Collaboration is a principle of *Thrive MSP 2040* and is reflected in how the Council develops and implements the *2040 Transportation Policy Plan*. The plan was developed in consultation with technical staff and policy makers throughout the region. In particular, two work groups were formed for the preparation of this plan. The Partner Agency Work Group consisted of technical staff from each county, from cities in different parts of the region, from the Counties Transit Improvement Board, the Metropolitan Airports Commission, the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, suburban transit providers, and different units of the Metropolitan Council and MnDOT. The Policy Maker Task Force provided overall policy direction on plan development and consisted of five members of the Metropolitan Council, three members of the Transportation Advisory Board, one member of the Counties Transit Improvement Board, and one member from MnDOT. In addition, during the preparation of the plan, input was sought from individual counties and cities, from MnDOT, from Council advisory committees including the Transportation Advisory Board, Technical Advisory Committee, Land Use Advisory Committee, Transportation Accessibility Advisory Committee, and from local and state historic and natural resource protection agencies.

The Council has a memorandum of understanding with the Minnesota Department of Transportation, titled "Metropolitan Transportation Planning Responsibilities for the Twin Cities Metropolitan Area." It describes Council and MnDOT responsibilities for metropolitan planning in the region. The Council publishes the Transportation Planning and Programming Guide for the Twin Cities Metropolitan Area, which describes the transportation planning process and the roles of various parties and stakeholders in collaboration and decision-making.

Prior to the adoption of this plan, the U.S. Census Bureau, based on 2010 Census data, expanded the urbanized area—which under federal law the metropolitan transportation planning process must cover—to areas outside the traditional jurisdiction of the Council. The Council, MnDOT, Wright County, Sherburne County, and the cities of Albertville, Elk River, Otsego, Saint Michael, and Hanover worked together to develop a memorandum of understanding describing how the metropolitan transportation responsibilities would be met in this expanded urbanized area. It also describes future collaboration between the Council, as the Metropolitan Planning Organization, and representatives of the extended area.

## Public Participation

Federal law requires that citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties are provided with a reasonable opportunity be involved in the transportation planning process. This requirement is satisfied through the Council's Public Participation Plan for Transportation Planning, adopted on December 22, 2006.